IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY

NOTES AND MEMORANDA

No. 10

The Helminth Parasites of Marsupials

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ALTHOUGH some marsupials are insectivorous or carnivorous in diet many others are vegetarian in diet and frequently cause appreciable damage to pastures and crops and therefore are of considerable economic importance. Recently, during the course of searching the literature for references to helminth infections in marsupials it was observed that, in certain cases, hosts other than marsupials were involved and in some instances were of economic importance in that they were domesticated animals. Whether or not marsupials assist in the spread of parasitic infection is somewhat inadequately dealt with in the literature but one cannot lose sight of their acting as reservoir hosts.

DISTRIBUTION AND NOMENCLATURE OF MARSUPIALS.

The term " Marsupials " is here used as indicative of the Mammalian Order Marsupialia (*Metatheria* or *Didelphia*) of which the principal characteristic is the possession by most forms of a sac or pouch (*marsupium*), which is supported by two epipubic bones, enclosing the teats of the mammary glands and receiving the helpless young at birth. The marsupials are in the main confined to the Australian and Austro-Malayan regions, but two families, one of which is the Didelphiidae, are found in the neotropical region to which they are peculiar. The majority of the forms are found in Australia although there are a number which occur in the eastern Austro-Malayan Islands, including the Celebes.

The group contains about 180 species. In the list appended to this memorandum are included 21 genera and the more detailed distribution of each species is given on pp. 36 to 52. An examination of this host-list will show that the nomenclature of marsupials is somewhat confusing even although only those synonyms that occur frequently in helminthological literature are cited. For the purposes of this memorandum Flower's classification has been followed, as given in the "List of the vertebrated animals exhibited in the gardens of the Zoological Society of London, 1828-1927." Vol. I, "Mammals," London, 1929, ix + 419 pp. In conjunction with this, reference has frequently been made to Oldfield Thomas' "Catalogue of the Marsupialia and Monotremata in the Collection of the British Museum (Natural History)." London, 1888, xiii + 401 pp.

The recognized scientific names and their principal synonyms as well as the common names of the 52 species considered in this memorandum are combined in one alphabetical arrangement in the host-list, but for the convenience of readers more conversant with the popular names these are listed in the following Table :—

Popular Names of Marsupials.

Agile Wallaby (*Macropus agilis*).
American Opossum (*Didelphis marsupialis*).
Antilopine Kangaroo (*Macropus antilopinus*).
Aru Island Wallaby (*Macropus brunii*).
Australian Naked-nosed Wombat (same as Mitchell's Wombat).
Azara's Opossum (*Didelphis marsupialis azarae*).
Bennett's Tree-Kangaroo (*Dendrolagus bennettianus*).
Bennett's Wallaby (*Macropus ruficollis bennetti*).
Black Cuscus (*Phalanger ursinus*).
Black-striped Wallaby (*Macropus dorsalis*).
Black-tailed Wallaby (*Macropus ualabatus*).
Black Wallaby (same as Black-tailed Wallaby).
Bridled Nail-tailed Wallaby (*Onychogalea frenata*).
Brush-tailed Pouched-Mouse (*Phascogale penicillata*).
Brush-tailed Rock-Wallaby (*Petrogale penicillata*).
Chilian Opossum (*Marmosa elegans*).
Common Three-striped Opossum (*Didelphis americana*).
Crab-eating Opossum (*Didelphis marsupialis karkinophaga*).
Dama Wallaby (*Macropus eugenii*).
De Bruyn's Wallaby (same as Aru Island Wallaby).
Derbian Wallaby (same as Dama Wallaby).
Eugene Island Wallaby (same as Dama Wallaby).
Fawn Nail-tailed Wallaby (*Onychogalea unguifera*).
Flinders Island Wombat (*Phascolomis ursinus*).
Forester (same as Great Grey Kangaroo).
Four-spotted Opossum (same as Quica Opossum).
Gamba Opossum (same as Pink-tip-eared Opossum).
Great Grey Kangaroo (*Macropus giganteus*).

Grizzled Grey Tree-Kangaroo (*Dendrolagus inustus*).
Herbert-River Phalanger (*Pseudochirus herbertensis*).
Koala (*Phascolarctos cinereus*).
Long-eared Opossum (same as Silver-Grey Opossum).
Long-nosed Bandicoot (*Perameles nasuta*).
Marsupial Wolf (same as Tasmanian Wolf).
Merian's Opossum (same as Murine Opossum).
Mitchell's Wombat (*Phascolomis mitchelli*).
Murine Opossum (*Marmosa murina*).
Native Cat (*Dasyurus* sp.).
Native Bear (same as Koala).
North-Australian Bandicoot (*Perameles macrura*).
Northern Wallaby (scientific name not traced).
Opossum, includes *Didelphis, Marmosa, Metachirus, Philander, Pseudochirus* and *Trichosurus*.
Pademelon Wallaby (*Marcopus thetidis*).
Philander (same as Aru Island Wallaby).
Philander Opossum (*Philander philander*).
Pink-tip-eared Opossum (*Didelphis marsupialis aurita*).
Quenda (same as Short-nosed Bandicoot).
Quica Opossum (*Metachirus opossum*).
Rat-tailed Opossum (*Metachirus nudicaudatus*).
Red Kangaroo (*Macropus rufus*).
Red-necked Wallaby (*Macropus ruficollis*).
Red-sided Opossum (*Didelphis brevicaudata*).
Short-eared Opossum or Phalanger (*Trichosurus caninus*).
Short-nosed Bandicoot (*Isoodon obesula*).
Silver-Grey Opossum (*Trichosurus vulpecula*).
Sombre Wallaby (*Macropus browni*).
Spectacled Hare-Wallaby (*Lagorchestes conspicillatus*).
Striped-faced Opossum (same as Azara's Opossum).
Swamp Wallaby (same as Black-tailed Wallaby).
Tammar (same as Dama Wallaby).
Tasmanian Devil (*Sarcophilus harrisii*).
Tasmanian Wolf (*Thylacinus cynocephalus*).
Thick-tailed Opossum (*Metachirus crassicaudatus*).
Thigh-striped Wallaby (same as Pademelon Wallaby).
Tiny Opossum (same as Murine Opossum).
Virginian Opossum (*Didelphis marsupialis virginiana*).
Viverrine Native-Cat (*Dasyurus viverrinus*).
Wallaroo (*Macropus robustus*).
Wambenger (same as Brush-tailed Pouched-Mouse).
Water Opossum (*Chironectes minimus*).
Wied's Opossum (same as Pink-tip-eared Opossum).
Woodward's Wallaroo (*Macropus robustus woodwardi*).
Woolly Opossum (*Philander lanigera*).
Zebra Wolf (same as Tasmanian Wolf).

It was not found possible to avoid the use of the somewhat cumbersome trinomial nomenclature as, in the case of *Didelphis marsupialis*, a number of subspecies have been identified, some of which enter into this list. This also applies to certain subspecies of the genus *Macropus*.

The following names of marsupials have also been referred to in the helminthological literature but no information is obtainable as to the

real species for which they stand : *Didelphis bistriata, Didelphis goagnia, Didelphis quoaiquiqua* and Northern Wallaby. In the case of *D. bistriata* there is the possibility that it was intended for *D. americana* (synonym *Didelphys tristriatus*). While such popular names as Three-striped Opossum and One-striped Opossum occur there is no mention made, however, of a Two-striped Opossum. Similarly the popular name of Northern Wallaby could not be linked up with any recognized scientific name. The only indication given was that it pertained to a species of *Halmaturus* which is synonymous with *Macropus*.

On certain occasions some authors made use of somewhat vague popular names in their records of parasitic infections and beyond stating that the host was " Kangaroo sp.", " Phalanger," or " Wallaby " no further details were given. To attempt to give a scientific name for any of these bare popular names is out of the question as can be observed in the case of " Wallaby " which includes the genera *Dorcopsis, Lagorchestes, Macropus, Onychogalea* and *Petrogale*. Where the host was not specified a note to this effect has been inserted in the Host-list.

Throughout the literature the names *Didelphis* and *Didelphys* occur frequently but the former spelling has been adhered to in this memorandum as being that generally recognized in modern usage and *Didelphys* has been treated as a synonym.

Economic Importance of Marsupials.

In their mode of nourishment and in their habits, marsupials differ much amongst themselves. Some are purely herbivorous such as the Kangaroos and Wallabies ; others are carnivorous as exemplified by the Dasyures and Thylacines ; but most of them are omnivorous. The Kangaroos and Wallabies are adapted for a terrestrial life and are rarely arboreal and frequent open or sparsely wooded country where they feed upon heather, grass and the young shoots of shrubs and bushes. The animals do much damage to young corn and other crops and frequently destroy pasture by biting it well down to the roots with their very efficient front teeth.

The " Native Cats " or Dasyures are among the best known of the marsupials as they render themselves notorious and obnoxious to settlers and farmers by their serious depredations in poultry-yards and similar

places as well as living in trees and feeding largely upon birds and their eggs.

The Tasmanian Wolf, now restricted to Tasmania, has been more or less driven to the mountains, owing to its former destructiveness to sheep, and is very rare. Its close neighbour, the Tasmanian Devil, is also restricted to Tasmania and is more destructive than the Wolf through killing sheep and fowls, apparently for the mere pleasure of slaughter long after its appetite has been sated.

Amongst the Bandicoots several species occur commonly and are widely distributed. They are well known to crop growers on account of the damage done by them in gardens and cultivated fields. They are fossorial in habit and their food consists of roots, bulbs, berries, fallen fruit and other vegetable substances, in addition to insects and earth worms.

The Brush-tailed Pouched-Mouse is noted as being very destructive to birds.

The large species of the typical opossums, restricted to America, are very destructive to poultry although the smaller forms subsist mainly or exclusively on insects. The Common or Virginian Opossum, although well known as a poultry-thief, is much esteemed for food by the American negroes of the Southern United States who are particularly partial to its flesh. It is also valued on account of its fur.

The Crab-eating Opossum of South America shows a considerable degree of adaptability and besides raiding hen-roosts and orchards, may at times enter towns where it forages for scraps of food.

The Common Phalanger or Australian Vulpine Opossum is found in both Australia and Tasmania. The Tasmanian variety, however, is the larger of the two and is now of considerable value on account of the deep rich brown fur it yields.

On the whole, while considering the large number of species represented in the Order, comparatively few are of very real economic significance.

Helminth Parasites of Marsupials.

The subjoined parasite-list of marsupials is as complete as present information allows. The parasites are listed under the four main Classes : flukes or Trematoda, tapeworms or Cestoda, roundworms or Nematoda

and thorny-headed worms or Acanthocephala. The accepted scientific name of the parasite together with the author and date are to be found on the first line. No synonyms have been inserted as, in many instances, so many are involved that it would be inconvenient to include them all in the list. A striking example of this is in the case of the cestode form *Echinococcus granulosus* which has over 100 recognized synonyms. Below the name of each parasite will be found a list of marsupials from which it has been recorded, the location in the body of the host as mentioned in the literature and the locality from which the infestation was reported. It will be observed by a glance at the list that locality reports in many cases do not coincide with the habitat of the host for the simple reason that, at times, an author has described or mentioned a parasite as occurring in a marsupial which was present in a living collection such as the Gardens of the Zoological Society of London. In a few cases also helminthological specimens have been described from material preserved in collections in museums and about which only data on the collection label was available. In a few instances no information was found regarding the location or locality of the parasites.

Under each parasite name appears one or more abbreviated references to the record of this form in the hosts from which it has been reported. The full references are arranged alphabetically at the end of this memorandum. Many records of parasitism were traced, in the first instance, in text-books or other abbreviated host-lists and, wherever possible, the original record has been found and checked. On a few of the species some comment is desirable and such comments will be found immediately following the list.

Helminth Parasites of Marsupials, with References.

TREMATODA.

Alaria sp. Cameron, 1931.

Host—Sarcophilus harrisii.

Location—Intestine.

Locality—Scottish Zool. Park, Edinburgh.

Reference—Cameron, 1931, p. 153.

ECHINOSTOMUM sp. Dikmans, 1931.
Host—Didelphis marsupialis virginiana.
Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
Reference—Dikmans, 1931, p. 3.

FASCIOLA HEPATICA Linnaeus, 1758.
Hosts—Kangaroo (unspecified).
Macropus giganteus.
Macropus ruficollis.
Wallaby (unspecified).
Location—Bile ducts.
Locality—Queensland ; New South Wales ; Australia.
References—Johnston, 1909, pp. 516, 518.
Johnston, 1911A, p. 48.
Linstow, 1878, p. 63.

HARMOSTOMUM DASYURI Johnston, 1913.
Host—Dasyurus viverrinus.
Location—Intestine.
Locality—Hunter's Hill, vicinity of Sydney, New South Wales.
References—Johnston, S. J., 1913, p. 727.
Travassos, 1928, p. 327.
Witenberg, 1925, p. 191.

HARMOSTOMUM OPISTHOTRIAS (Lutz, 1895) Braun, 1899.
Hosts—Didelphis marsupialis aurita.
Didelphis marsupialis virginiana.
Location—Small intestine.
Locality—Houston, Texas, U.S.A.
São Paulo, Brazil.
References—Braun, 1899, p. 492 ; 1900A, p. 12 ; 1901, p. 338.
Chandler, 1932, p. 4.
Lutz, 1895, p. 181.
Travassos, 1928, p. 327.
Viana, 1924, p. 137.

HARMOSTOMUM OPISTHOTRIAS var. VIRGINIANA Dickerson, 1930.
Host—Didelphis marsupialis virginiana.

Locality—North America.
Reference—Dickerson, 1930, p. 37.

HARMOSTOMUM SIMILE Johnston, 1913.
Host—Isoodon obesula.
Location—Intestine.
Locality—Vicinity of Sydney, New South Wales.
References—Johnston, S. J., 1913, p. 731.
Travassos, 1928, p. 327.
Witenberg, 1925, p. 191.

HARMOSTOMUM sp. Dikmans, 1931.
Host—Didelphis marsupialis virginiana.
Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
Reference—Dikmans, 1931, p. 3.

HEMISTOMUM PEDATUM Diesing, 1850.
Hosts—Didelphis marsupialis aurita.
Didelphis marsupialis karkinophaga.
Metachirus nudicaudatus.
Location—Small intestine.
Locality—Brazil.
References—Brandes, 1888, p. 61.
Diesing, 1850, p. 309; 1855, p. 61.
Linstow, 1878, p. 64.
Viana, 1924, p. 140.

LEVINSENIELLA JÄGERSKIOLDI Travassos, 1920.
Host—Didelphis marsupialis aurita.
Location—Intestine.
Locality—Manguinhos (Rio), Brazil.
References—Travassos, 1920, p. 87.
Viana, 1924, p. 127.

MEHLISIA ACUMINATA Johnston, 1913.
Host—Dasyurus viverrinus.
Location—Intestine.
Locality—New South Wales.
Reference—Johnston, S. J., 1913, p. 733.

NEODIPLOSTOMUM LUCIDUM LaRue & Bosma, 1927.
Host—Didelphis marsupialis virginiana.
Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
References—Dikmans, 1931, p. 3.
LaRue & Bosma, 1927, p. 124.

PLAGIORCHIS DIDELPHIDIS (Parona, 1896).
Host—Didelphis marsupialis azarae.
Locality—Paraguay.
References—Luehe, 1899, p. 532.
Parona, 1896, p. 164.
Stossich, 1904, p. 2.

PROALARIA VARIABILIS Chandler, 1932.
Host—Didelphis marsupialis virginiana.
Location—Small intestine.
Locality—Houston, Texas, U.S.A.
Reference—Chandler, 1932, p. 1.

RHOPALIAS BACULIFER Braun, 1900.
Host—Chironectes minimus.
Location—Intestine.
Locality—Brazil.
References—Braun, 1900B, p. 28; 1901, p. 325.
Viana, 1924, p. 99.

RHOPALIAS CORONATUS (Rudolphi, 1819).
Hosts—Chironectes minimus.
Didelphis marsupialis aurita.
Didelphis marsupialis karkinophaga.
Didelphis marsupialis virginiana.
Metachirus nudicaudatus.
Metachirus opossum.
Location—Intestine.
Locality—Brazil.
References—Braun, 1893, p. 911; 1901, p. 320.
Cobbold, 1879, p. 432.
Diesing, 1850, p. 400.

Dujardin, 1845, p. 425.
Linstow, 1878, p. 64.
Rudolphi, 1819, p. 686.
Stiles & Hassall, 1898, p. 93.
Stossich, 1892, p. 30.
Viana, 1924, p. 109.

Rhopalias horridus (Diesing, 1850).
Hosts—Didelphis marsupialis aurita.
Metachirus nudicaudatus.
Metachirus opossum.
Philander philander.
Location—Stomach, small intestine.
Locality—Angra dos Reis [Est. do Rio], Brazil.
References—Braun, 1893, p. 911; 1901, p. 319.
Cobbold, 1879, p. 432.
Diesing, 1850, p. 400.
Linstow, 1878, p. 65.
Stiles & Hassall, 1898, p. 93.

Rhopalias macracanthus Chandler, 1932.
Host—Didelphis marsupialis virginiana.
Location—Small intestine.
Locality—Houston, Texas, U.S.A.
Reference—Chandler, 1932, p. 5.

Rhopalias sp. Dikmans, 1931.
Host—Didelphis marsupialis virginiana.
Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
Reference—Dikmans, 1931, p. 3.

CESTODA.

Anoplotaenia dasyuri Beddard, 1911.
Host—Sarcophilus harrisii.
Location—Zool. Gdns., London.

References—Baer, 1925, p. 2.
Beddard, 1911, p. 1003.
Cameron, 1931, p. 153.
Meggitt, 1924, p. 43.
Ortlepp, 1922, p. 611.

BANCROFTIELLA TENUIS Johnston, 1911.
Host—Macropus ualabatus.
Location—Intestine.
Locality—Victoria, Australia.
References—Johnston, 1911A, p. 50 ; 1911B.
Meggitt, 1924, p. 57.
Ortlepp, 1922, p. 610.

BERTIELLA ABERRATA Nybelin, 1917.
Host—Pseudochirus herbertensis.
References—Meggitt, 1924, p. 23.
Nybelin, 1917, p. 21.
Ortlepp, 1922, p. 611.

BERTIELLA EDULIS (Zschokke, 1898).
Host—Phalanger ursinus.
Locality—Australia and vicinity ; Celebes.
References—Bourquin, 1905, pp. 418, 494, 503.
Douthitt, 1915, p. 418.
Johnston, 1909, p. 520.
Meggitt, 1924, p. 23.
Ortlepp, 1922, p. 610.
Zschokke, 1898A, p. 477 ; 1899, p. 405 ; 1904B, p. 60 ; 1907, p. 264.

BERTIELLA OBESA (Zschokke, 1898).
Host—Phascolarctos cinereus.
Locality—Queensland ; New South Wales ; Australia.
References—Bourquin, 1905, pp. 418, 495, 503.
Cobbold, 1879, p. 432.
Douthitt, 1915, p. 418.
Johnston, 1909, p. 520.
Meggitt, 1924, p. 23.

Nybelin, 1917, p. 34.
Ortlepp, 1922, p. 611.
Zschokke, 1896, p. 481 ; 1898A, p. 477 ; 1898B, p. 368 ; 1899, p. 422 ; 1904B, p. 60 ; 1907, p. 264.

BERTIELLA PELLUCIDA Nybelin, 1917.
Host—Pseudochirus lemuroides.
References—Meggitt, 1924, p. 24.
Nybelin, 1917, p. 18.
Ortlepp, 1922, p. 610.

BERTIELLA PSEUDOCHIRI Nybelin, 1917.
Host—Pseudochirus herbertensis.
References—Meggitt, 1924, p. 24.
Nybelin, 1917, p. 20.
Ortlepp, 1922, p. 611.

BERTIELLA RIGIDA (Janicki, 1905).
Host—Opossum (Phalanger [*sens. lat.*] sp.).
Locality—Tawarin, New Guinea.
References—Douthitt, 1915, p. 417.
Janicki, 1905, p. 127 ; 1906A, p. 528 ; 1906B, p. 181.
Johnston, 1909, p. 520.
Meggitt, 1924, p. 24.
Ortlepp, 1922, p. 611.
Zschokke, 1907, p. 264.

BERTIELLA SARASINORUM (Zschokke, 1898).
Host—Phalanger ursinus.
References—Bourquin, 1905, pp. 418, 494, 503.
Douthitt, 1915, p. 418.
Fuhrmann, 1899, p. 85.
Johnston, 1909, p. 520.
Meggitt, 1924, p. 24.
Ortlepp, 1922, p. 610.
Zschokke, 1898A, p. 477 ; 1899, p. 404 ; 1904B, p. 60 ; 1907, p. 264.

BERTIELLA UNDULATA Nybelin, 1917.
Host—Pseudochirus lemuroides.

References—Meggitt, 1924, p. 25.
Nybelin, 1917, p. 7.
Ortlepp, 1922, p. 610.

BOTHRIOCEPHALUS DIDELPHIDIS Ariola, 1900.
Hosts—Didelphis marsupialis.
Didelphis marsupialis azarae.
Location—Intestine.
Locality—São Paulo ; Brazil.
References—Ariola, 1900, p. 418.
Fuhrmann, 1902, p. 445.
Janicki, 1906A, p. 520.
Meggitt, 1924, p. 122.
Ortlepp, 1922, p. 611.
Parona, 1901, p. 1.

BOTHRIOCEPHALUS MARGINATUS Krefft, 1871.
Host—Macropus sp.
Locality—Queensland ; Australia.
References—Ariola, 1900, p. 453.
Cobbold, 1879, p. 432.
Johnston, 1909, p. 518.
Krefft, 1871, p. 227.
Ortlepp, 1922, p. 610.

BOTHRIOCEPHALUS sp. Janicki, 1904.
Hosts—Didelphis goagnia.
Didelphis sp.
Location—Larval form in musculature and connective tissue.
Locality—Berlin Museum and Santa Cruz.
References—Janicki, 1904B, p. 771 ; 1906A, p. 516.
Meggitt, 1924, p. 146.

CITTOTAENIA VILLOSA Lewis, 1914.
Host—Lagorchestes conspicillatus.
Location—Stomach, intestine.
Locality—Hermite Island, Monte Bello Islands.
References—Lewis, 1914, p. 427.
Meggitt, 1924, p. 27.
Ortlepp, 1922, p. 610.

Dasyurotaenia robustae Beddard, 1912.

Host—Sarcophilus harrisii.

Locality—Zool. Gdns., London.

References—Baer, 1925, p. 9.
Beddard, 1912, p. 677 ; 1915, p. 187.
Meggitt, 1924, p. 27.
Ortlepp, 1922, p. 611.

Dithyridium (Piestocystis) cynocephali Ransom, 1907.

Host—Thylacinus cynocephalus.

Location—Larval form in heart muscles. [Adult stage unknown.]

Locality—Zool. Gdns., Washington, U.S.A.

References—Johnston, 1909, p. 521.
Meggitt, 1924, p. 147.
Ortlepp, 1922, p. 611.
Ransom, 1907, p. 31.

Echinococcus granulosus (Batsch, 1786) Rudolphi, 1805.

Hosts—Macropus dorsalis.
Macropus eugenii.
Macropus giganteus.
Macropus robustus.
Macropus thetidis.
Macropus ualabatus.

Location—Larval form, Hydatid, in lungs and liver. [Adult in canines.]

Locality—Queensland ; New South Wales ; Australia.

References—Cobb, 1905, p. 630.
Hall, 1919, p. 58.
Johnston, 1909, p. 516 ; 1911a, p. 47.
Linstow, 1878, p. 64.
Meggitt, 1924, p. 150.
Neumann, 1905, p. 431.
Neveu-Lemaire, 1912, p. 482.
Ortlepp, 1922, p. 610.
Pagenstecher, 1871.
Railliet, 1893, p. 260.
Stiles, 1906, p. 76.

HEPATOTAENIA DIAPHANA (Zschokke, 1907) Nybelin, 1917.

Host—Phascolomis ursinus.

Location—Liver.

Locality—Tasmania ? ; Islands of Bass Strait ; Australia.

References—Douthitt, 1915, p. 399.
Johnston, 1911A, p. 49.
Meggitt, 1924, p. 27.
Nybelin, 1917, p. 29.
Ortlepp, 1922, p. 611.
Zschokke, 1907, p. 261.

HEPATOTAENIA FELLICOLA Nybelin, 1917.

Host—Macropus agilis.

Location—Gall bladder.

References—Meggitt, 1924, p. 28.
Nybelin, 1917, p. 28.
Ortlepp, 1922, p. 610.

HEPATOTAENIA FESTIVA (Rudolphi, 1819) Nybelin, 1917.

Hosts—Macropus eugenii.
Macropus giganteus.
Macropus robustus.
Onychogalea unguifera.

Location—Gall bladder and bile ducts.

Locality—New South Wales and Queensland ; Australia.

References—Blanchard, 1891, p. 444.
Cobbold, 1879, p. 432.
Diesing, 1850, p. 500.
Douthitt, 1915, p. 423.
Dujardin, 1845, p. 593.
Janicki, 1906A, p. 527.
Johnston, 1909, p. 516.
Linstow, 1878, p. 63.
Meggitt, 1924, p. 28.
Nybelin, 1917, p. 25.
Ortlepp, 1922, p. 610.
Rudolphi, 1819, pp. 146, 490.
Stiles & Hassall, 1893, p. 53.
Zschokke, 1896, p. 481 ; 1904B, p. 60 ; 1907, p. 264.

HYMENOLEPIS PERAMELIDARUM Nybelin, 1917.
Host—Perameles macrura.
References—Meggitt, 1924, p. 73.
Nybelin, 1917, p. 34.
Ortlepp, 1922, p. 611.

LINSTOWIA BRASILIENSIS Janicki, 1904.
Hosts—Didelphis americana.
Didelphis bistriata.
Locality—Brazil; South America.
References—Bourquin, 1905, p. 502.
Douthitt, 1915, p. 426.
Janicki, 1904B, p. 770; 1906A, p. 507.
Meggitt, 1924, p. 41.
Ortlepp, 1922, p. 612.
Zschokke, 1904A, p. 291; 1904B, p. 60.

LINSTOWIA ECHIDNAE (Thompson, 1893) Zschokke, 1899.
Host—Isoodon obesula.
References—Bourquin, 1905, pp. 418, 502.
Meggitt, 1924, p. 41.
Ortlepp, 1922, p. 611.

LINSTOWIA JHERINGI Zschokke, 1904.
Host—Didelphis americana.
Locality—South America.
References—Bourquin, 1905, p. 502.
Douthitt, 1915, p. 426.
Janicki, 1906A, p. 512.
Meggitt, 1924, p. 41.
Ortlepp, 1922, p. 612.
Zschokke, 1904A, p. 291; 1904B, p. 60.

LINSTOWIA SEMONI (Zschokke, 1896) Zschokke, 1899.
Hosts—Isoodon obesula.
Perameles nasuta.
Locality—Queensland; Sydney, New South Wales; Zool. Gdns., St. Petersburg.

References—Bourquin, 1905, pp. 418, 502.
Douthitt, 1915, p. 426.
Janicki, 1906A, pp. 507, 512.
Johnston, 1909, p. 521 ; 1911A, p. 50.
Linstow, 1903, p. 282.
Meggitt, 1924, p. 41.
Nybelin, 1917, p. 34.
Ortlepp, 1922, p. 611.
Shipley, 1902, p. 608.
Zschokke, 1896, p. 481 ; 1898B, p. 364 ; 1899, p. 441 ; 1904B, p. 60 ; 1907, p. 264.

LINSTOWIA SEMONI var. ACANTHOCIRROSA Nybelin, 1917.
Host—Perameles macrura.
References—Meggitt, 1924, p. 42.
Nybelin, 1917, p. 33.
Ortlepp, 1922, p. 611.

MESOCESTOIDES sp. Dikmans, 1931.
Host—Didelphis marsupialis virginiana.
Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
Reference—Dikmans, 1931, p. 3.

MONIEZIA BIPAPILLOSA (Leidy, 1875).
Hosts—Phascolomis mitchelli.
Phascolomis sp.
Locality—Zool. Gdns., Philadelphia ; New South Wales, Australia.
References—Cobbold, 1879, p. 432.
Johnston, 1909, p. 519.
Leidy, 1875A, p. 14 ; 1904, p. 136.
Meggitt, 1924, p. 29.
Ortlepp, 1922, p. 611.

OOCHORISTICA BIVITTATA Janicki, 1904.
Hosts—Marmosa elegans.
Marmosa murina.
Location—Intestine.
Locality—Vienna Museum.

References—Janicki, 1904B, p. 772; 1906A, p. 515.
Meggitt, 1924, p. 43.
Ortlepp, 1922, p. 611.
Zschokke, 1904A, p. 219; 1904B, p. 60; 1905, p. 61.

Oochoristica didelphidis (Rudolphi, 1819) Zschokke, 1904.
Hosts—Marmosa elegans.
Marmosa murina.
Location—Intestine.
Locality—Vienna Museum
References—Janicki, 1904B, p. 772; 1906A, p. 513.
Linstow, 1878, p. 64.
Meggitt, 1924, p. 43.
Ortlepp, 1922, p. 611.
Rudolphi, 1819, p. 170.
Zschokke, 1904B, p. 60; 1905, p. 61.

Oochoristica marmosae Beddard, 1914.
Host—Marmosa elegans.
References—Beddard, 1914, p. 269.
Meggitt, 1924, p. 43.
Ortlepp, 1922, p. 611.

Oochoristica murina Zschokke, 1904.
Hosts—Marmosa elegans.
Marmosa murina.
Locality—South America.
References—Meggitt, 1924, p. 44.
Ortlepp, 1922, p. 611.
Zschokke, 1904A, p. 219.

Parabertiella campanulata Nybelin, 1917.
Host—Pseudochirus lemuroides.
References—Meggitt, 1924, p. 33.
Nybelin, 1917, p. 23.
Ortlepp, 1922, p. 610.

Progamotaenia bancrofti (Johnston, 1913) Nybelin, 1917
Hosts—Onychogalea frenata.
Onychogalea unguifera.

References—Johnston, T. H., 1913, p. 68.
Meggitt, 1924, p. 34.
Nybelin, 1917, p. 30.
Ortlepp, 1922, p. 610.

PROGAMOTAENIA LAGORCHESTIS (Lewis, 1914) Nybelin, 1917.
Host—Lagorchestes conspicillatus.
Location—Stomach, intestine.
Locality—Hermite Island, Monte Bello Islands.
References—Lewis, 1914, p. 420.
Meggitt, 1924, p. 34.
Nybelin, 1917, p. 33.
Ortlepp, 1922, p. 610.

PROGAMOTAENIA ZSCHOKKEI (Janicki, 1905) Nybelin, 1917.
Host—Macropus sp.
Locality—New Guinea.
References—Janicki, 1905, p. 128; 1906A, p. 528.
Johnston, 1909, p. 518.
Lewis, 1914, p. 425.
Meggitt, 1924, p. 34.
Ortlepp, 1922, p. 610.

RAILLIETINA (PARONIELLA) MACROPA Ortlepp, 1922.
Host—Macropus brunii.
Location—Intestine.
Locality—Zool. Gdns., London.
References—Meggitt, 1924, p. 50.
Ortlepp, 1922, p. 602.

SPARGANUM REPTANS (Diesing, 1850).
Hosts—Didelphis brevicaudata.
Metachirus opossum.
Location—Occurs as larval form.
References—Diesing, 1850, p. 582.
Linstow, 1878, p. 64.
Meggitt, 1924, p. 158.
Parona, 1901, p. 2.

SPARGANUM sp. Johnston, 1909.
Host—Dasyurus viverrinus.
Location—Larval form in body cavity.
Locality—Sydney, New South Wales.
Reference—Johnston, 1909, p. 521.

SPARGANUM sp. (Parona, 1901).
Host—Chironectes minimus.
Location—Occurs as larval form.
Locality—São Paulo.
References—Meggitt, 1924, p. 158.
Parona, 1901, p. 2.

TAENIA GEOPHILOIDES Cobbold, 1879.
Host—Phascolarctos cinereus.
Locality—Brisbane, Australia.
References—Cobbold, 1879, p. 432.
Meggitt, 1924, p. 87.
Ortlepp, 1922, p. 611.

TAENIA KREFFTI Johnston, 1909.
Hosts—Macropus sp.
"Northern Wallaby."
Locality—Queensland, Australia.
References—Cobbold, 1879, p. 432.
Johnston, 1909, p. 518; 1912, p. 3.
Krefft, 1871, p. 218.
Meggitt, 1924, p. 89.
Ortlepp, 1922, p. 610.

TAENIA MASTERSII Krefft, 1871.
Host—Macropus sp.
Locality—Queensland, Australia.
References—Cobbold, 1879, p. 432.
Johnston, 1909, p. 519; 1912, p. 3.
Krefft, 1871, p. 221.
Meggitt, 1924, p. 90.
Ortlepp, 1922, p. 610.
Zschokke, 1898B, pp. 359, 376; 1899, p. 431.

TAENIA PHALANGISTAE Krefft, 1871.

Host—Trichosurus vulpecula.

Location—Intestine.

Locality—Queensland or New South Wales ; Australia.

References—Cobbold, 1879, p. 432.
Johnston, 1909, p. 520 ; 1912, p. 3.
Krefft, 1871, p. 221.
Linstow, 1889, p. 27.
Meggitt, 1924, p. 91.
Ortlepp, 1922, p. 611.
Zschokke, 1898B, pp. 359, 376 ; 1899, p. 431.

TRIPLOTAENIA MIRABILIS Boas, 1902.

Hosts—Macropus sp.
Petrogale penicillata.

Location—Intestine.

Locality—Australia.

References—Boas, 1902, p. 329.
Janicki, 1904A, p. 243 ; 1906A, p. 520.
Meggitt, 1924, p. 36.
Ortlepp, 1922, p. 610.
Spengel, 1905, p. 287.
Zschokke, 1904A, p. 293 ; 1904B, p. 60 ; 1907, p. 264.

NEMATODA.

ACANTHOCHEILONEMA AUSTRALE (Linstow, 1897) Baylis, 1925.

Hosts—Petrogale penicillata.
Trichosurus vulpecula.
Wallaby.

Location—" Stomach cavity " (probably abdominal cavity).

Locality—Torrens Creek, North Queensland ; Australia.

References—Baylis, 1925, p. 113.
Johnston, 1909, p. 519.
Leiper, 1911, p. 620.
Linstow, 1897, p. 610 ; 1905, p. 358.
Yorke & Maplestone, 1926, p. 426.

ACANTHOCHEILONEMA ROEMERI (Linstow, 1905) Baylis, 1925.

Hosts—Macropus antilopinus.
Macropus giganteus.
Location—Leg joints.
Locality—St. George District, Queensland ; Australia.
References—Baylis, 1925, p. 114.
Johnston, 1909, p. 517.
Linstow, 1905, p. 356 ; 1906A, p. 7.
Yorke & Maplestone, 1926, p. 427.

ASCARIS sp. Krefft, 1871.

Host—Perameles nasuta.
Locality—Australia.
References—Johnston, 1909, p. 521.
Krefft, 1871, p. 212.

ASPIDODERA HARWOODI Chandler, 1932.

Host—Didelphis marsupialis virginiana.
Location—Caecum.
Locality—Houston, Texas, U.S.A.
Reference—Chandler, 1932, p. 8.

ASPIDODERA RAILLIETI Travassos, 1913.

Host—Didelphis marsupialis aurita.
Location—Caecum.
Locality—Brazil.
References—Travassos, 1913, p. 306.
Yorke & Maplestone, 1926, p. 220.

ASPIDODERA SCOLECIFORMIS (Diesing, 1851).

Hosts—Didelphis domestica.
Marmosa murina.
Location—Intestine, caecum.
Locality—Brazil.
References—Cobbold, 1879, p. 321.
Diesing, 1851, p. 208.
Linstow, 1878, p. 64.
Stiles & Hassall, 1905, p. 88.
Travassos, 1913, p. 305.
Yorke & Maplestone, 1926, p. 220.

ASPIDODERA SUBULATA (Molin, 1860).
Host—Metachirus nudicaudatus.
Location—Stomach, intestine.
Locality—Ypanema.
References—Cobbold, 1879, p. 434.
Linstow, 1889, p. 27.
Molin, 1860, p. 514.
Railliet & Henry, 1912, p. 257.
Travassos, 1913, p. 305.
Yorke & Maplestone, 1926, p. 220.

AUSTROSTRONGYLUS MACROPODIS Chandler, 1924.
Host—Macropus ruficollis bennetti.
Location—Upper part of small intestine.
Locality—Australia.
References—Chandler, 1924, p. 160.
Yorke & Maplestone, 1926, p. 138.

BREINLIA DENDROLAGI Solomon, 1933.
Host—Dendrolagus inustus.
Location—Peritoneal cavity.
Locality—Zool. Gdns., London.
Reference—Solomon, 1933, p. 101.

BREINLIA TRICHOSURI (Breinl, 1911).
Host—Trichosurus vulpecula.
Locality—North Queensland.
References—Breinl, 1913, p. 39.
Yorke & Maplestone, 1926, p. 401.

CAPILLARIA AURITAE Travassos, 1914.
Host—Didelphis marsupialis aurita.
Location—Small intestine.
Locality—Brazil.
References—Travassos, 1914B, p. 429 ; 1915A, p. 161.
Yorke & Maplestone, 1926, p. 25.

CLOACINA DAHLI Linstow, 1898.
Host—Macropus browni.
Location—Alimentary canal.

Locality—Ralum ; Bismark Archipelago.

References—Johnston, 1909, p. 518.
Linstow, 1898A, p. 286.
Stiles & Hassall, 1905, p. 94.
Yorke & Maplestone, 1926, p. 176.

CRUZIA TENTACULATA (Rudolphi, 1819) Travassos, 1917.

Hosts—Didelphis domestica.
Didelphis marsupialis aurita.
Didelphis marsupialis karkinophaga.
Didelphis marsupialis virginiana.
Didelphis quoaiquiqua.
Marmosa murina.
Metachirus nudicaudatus.
Metachirus opossum.
Philander lanigera.
Philander philander.

Location—Intestine, caecum.

Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.; Houston, Texas, U.S.A.; Pennsylvania; Brazil.

References—Chandler, 1932, p. 10.
Cobbold, 1879, p. 433.
Diesing, 1851, p. 147 ; 1861, p. 655.
Dikmans, 1931, p. 3.
Dujardin, 1845, p. 168.
Leidy, 1856, p. 51.
Linstow, 1878, p. 64.
Rudolphi, 1819, p. 658.
Schneider, 1866, p. 115.
Stiles & Hassal, 1894, p. 340.
Travassos, 1917, p. 100 ; 1922, p. 88.
Yorke & Maplestone, 1926, p. 242.

DIROFILARIA WEBSTERI (Cobbold, 1879).

Hosts—Macropus giganteus.
Kangaroo.

Location—Knee joint.
Locality—Queensland ? ; New South Wales ; Australia.
References—Cobbold, 1879, p. 433.
Fletcher, 1883, p. 388.
Johnston, 1909, p. 516 ; 1911A, p. 47.
Linstow, 1889, p. 27 ; 1905, p. 357.
Railliet & Henry, 1910, p. 251.
Yorke & Maplestone, 1926, p. 395.

ECHINONEMA CINCTA Linstow, 1898.
Host—Isoodon obesula.
Location—Intestine.
Locality—Queensland ; Australia.
References—Gemmill & Linstow, 1902, p. 113.
Johnston, 1909, p. 521 ; 1911A, p. 50.
Linstow, 1898B, p. 469.
Parona, 1900, p. 194.
Yorke & Maplestone, 1926, p. 348.

ECHINONEMA sp. Parona, 1900.
Host—Didelphis marsupialis azarae.
Location—Intestine.
Locality—Museum, Buenos Aires.
Reference—Parona, 1900, p. 194.

ECHINORHYNCHUS MICROCEPHALUS Rudolphi, 1819.
Hosts—Didelphis marsupialis aurita.
Didelphis marsupialis karkinophaga.
Didelphis marsupialis virginiana.
Didelphis sp.
Marmosa murina.
Philander philander.
Location—Mesentery.
Locality—Brazil ; U.S.A.
References—Cobbold, 1879, p. 434.
Diesing, 1851, p. 20.
Dujardin, 1845, p. 504.
Ihering, 1902, p. 45.
Leidy, 1856, p. 48.

Linstow, 1878, p. 65.
Luehe, 1905, p. 254.
Porta, 1909, p. 256.
Rudolphi, 1819, p. 665.
Travassos, 1915B, p. 105 ; 1915C, p. 137.
Westrumb, 1821, p. 3.

FILARIA DENTIFERA Linstow, 1898.
Host—Trichosurus vulpecula.
Location—Body cavity.
Locality—Queensland or New South Wales ; Australia.
References—Johnston, 1909, p. 520.
Linstow, 1898B ; 1905, p. 358.

FILARIA sp. Eisig, 1869.
Host—Macropus ruficollis bennetti.
Location—Pericardium.
Locality—Heidelberg Zool. Inst. ; Tasmania.
References—Eisig, 1869, p. 99.
Johnston, 1909, p. 518.
Linstow, 1878, p. 64 ; 1905, p. 357.

FILARIA sp. Johnston, 1910.
Host—Dendrolagus bennettianus.
Location—Subcutaneous tissues.
Locality—North Queensland.
References—Johnston, 1910, p. xii ; 1911A, p. 49.

FILARIA sp. Johnston, 1910.
Host—Onychogalea frenata.
Location—In nodules in subcutaneous tissues
Locality—Gippsland, Victoria, Australia.
References—Johnston, 1910, p. xii ; 1911A, p. 49

FILARIA sp. Johnston, 1910.
Host—Trichosurus caninus.
Location—Peritoneum.
Locality—Gosford District, New South Wales.
References—Johnston, 1910, p. xvii ; 1911A, p. 49.

FILARIA sp. Plimmer, 1912.
Host—Metachirus nudicaudatus.
Location—Blood.
Locality—Zool. Gardens, London.
References—Plimmer, 1912A, p. 407 ; 1912B, p. 137.

FILARIA sp. Plimmer, 1912.
Host—Onychogalea frenata.
Location—Blood.
Locality—Zool. Gardens, London.
References—Plimmer, 1912A, p. 407 , 1912B, p. 137.

GLOBOCEPHALOIDES MACROPODIS Yorke & Maplestone, 1926.
Host—Macropus sp.
Reference—Yorke & Maplestone, 1926, p. 174

GNATHOSTOMA DIDELPHYS Chandler, 1932.
Host—Didelphis marsupialis virginiana.
Location—Liver.
Locality—Houston, Texas, U.S.A.
Reference—Chandler, 1932, p. 10.

GNATHOSTOMA TURGIDUM Stossich, 1902.
Hosts—Didelphis marsupialis aurita.
Didelphis marsupialis azarae.
Didelphis marsupialis virginiana.
Location—Stomach.
Locality—Republic of Argentina ; Brazil ; Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
References—Baylis & Lane, 1920, p. 301.
Braun, 1915, p. 304.
Dikmans, 1931, p. 2.
Stossich, 1902, p. 13.
Travassos, 1925, p. 5.
Yorke & Maplestone, 1926, p. 340.

HELIGMOSOMUM DIDELPHE (Travassos, 1914) Travassos, 1918.
Host—Didelphis marsupialis aurita.
Location—Small intestine.

Locality—Brazil.
References—Travassos, 1914A, p. 326; 1919, p. 197; 1921, pp. 35, 89.
Yorke & Maplestone, 1926, p. 142.

HETERAKIS PARADOXA Linstow, 1906.
Host—Marmosa murina.
Location—Intestine.
References—Linstow, 1906B, p. 750.
Railliet & Henry, 1914, p. 676.
Yorke & Maplestone, 1926, p. 216.

LABIOSTRONGYLUS LABIOSTRONGYLUS Yorke & Maplestone, 1926.
Host—Macropus sp.
Reference—Yorke & Maplestone, 1926, p. 67.

LABIOSTRONGYLUS LONGISPICULARIS Wood, 1929.
Host—Macropus robustus woodwardi.
Location—Stomach.
Locality—? Western Australia.
Reference—Wood, 1929A, p. 550.

LAGOCHILASCARIS TURGIDA (Stossich, 1902).
Host—Metachirus crassicaudatus.
Locality—Buenos Aires.
References—Stossich, 1902, p. 2.
Yorke & Maplestone, 1926, p, 261.

MACROPOSTRONGYLUS AUSTRALIS Yorke & Maplestone, 1926.
Host—Macropus sp.
Locality—Queensland.
Reference—Yorke & Maplestone, 1926, p. 75.

MACROPOSTRONGYLUS BAYLISI Wood, 1930.
Host—Macropus robustus woodwardi.
Location—Caecum.
Locality—Western Australia.
Reference—Wood, 1930, p. 209.

MACROPOSTRONGYLUS MACROPOSTRONGYLUS Yorke & Maplestone, 1926.
Host—Macropus sp.
Locality—Queensland.
Reference—Yorke & Maplestone, 1926, p. 75.

MACROPOSTRONGYLUS YORKEI Baylis, 1927.
Host—Macropus sp.
Locality—Townsville, North Queensland.
Reference—Baylis, 1927, p. 215.

NICOLLINA SARCOPHILI Cameron, 1931.
Host—Sarcophilus harrisii.
Location—Intestine.
Locality—Scottish Zool. Park, Edinburgh.
References—Cameron, 1931, p. 153.
Baylis, 1930A, p. 10; 1930B, p. 550.

OESOPHAGOSTOMUM sp. Dikmans, 1931.
Host—Didelphis marsupialis virginiana.
Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
Reference—Dikmans, 1931, p. 3.

OSTERTAGIA CALLIS (Travassos, 1914) Travassos, 1918.
Host—Didelphis marsupialis aurita.
Location—Small intestine.
Locality—Brazil.
References—Travassos, 1914A, p. 325; 1919, p. 193; 1921, pp. 24, 61
Yorke & Maplestone, 1926, p. 125.

PHARYNGOSTRONGYLUS AUSTRALIS (Mönnig, 1926) Wood, 1929.
Hosts—Macropus robustus woodwardi.
Macropus rufus.
Location—Stomach.
Locality—Western Australia.
References—Mönnig, 1926, p. 293; 1927, p. 265.
Wood, 1929B, p. 552.

PHARYNGOSTRONGYLUS MACROPODIS Yorke & Maplestone, 1926.
Host—Macropus sp.
Reference—Yorke & Maplestone, 1926, p. 67.

PHARYNGOSTRONGYLUS WOODWARDI Wood, 1930.
Host—Macropus robustus woodwardi.
Location—Stomach.

Locality—Western Australia.
Reference—Wood, 1930, p. 213.

PHYSALOPTERA TURGIDA Rudolphi, 1819.
Hosts—Didelphis marsupialis azarae.
Didelphis marsupialis karkinophaga.
Didelphis marsupialis virginiana.
Marmosa murina.
Metachirus crassicaudatus.
Metachirus nudicaudatus.
Locality—Buenos Aires, Brazil ; Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La. ; Houston, Texas.
References—Chandler, 1932, p. 10.
Cobbold, 1879, p. 433.
Diesing, 1851, p. 233.
Dikmans, 1931, p. 3.
Leidy, 1856, p. 53 ; 1886, p. 312 ; 1904, p. 98.
Linstow, 1878, p. 64.
Parona, 1900, p. 195.
Rudolphi, 1819, p. 644.
Schneider, 1866, p. 62.
Stossich, 1889, p. 43 ; 1902, p. 10.
Yorke & Maplestone, 1926, p. 355.

PROTOSPIRURA MARSUPIALIS Baylis, 1927.
Host—Opossum—probably Trichosurus vulpecula.
Locality—Townsville, North Queensland.
Reference—Baylis, 1927, p. 220.

SETARIA SPELAEA (Leidy, 1875).
Hosts—Australian Wallaby.
Macropus sp.
Location—Abdominal cavity.
Locality—Zool. Gdns., Philadelphia, U.S.A. ; Australia.
References—Cobbold, 1879, p. 433.
Johnston, 1909, p. 518.
Leidy, 1875B, p. 17 ; 1904, p. 137.
Railliet & Henry, 1911, p. 388.
Yorke & Maplestone, 1926, p. 423.

SPIROCERCA HEYDONI Baylis, 1927.

Host—Dasyurus sp.

Location—Cysts in wall of stomach and intestine; also a few free in stomach.

Locality—Cairns, North Queensland.

Reference—Baylis, 1927, p. 221.

SPIROSTRONGYLUS SPIROSTRONGYLUS Yorke & Maplestone, 1926.

Host—Macropus sp.

Reference—Yorke & Maplestone, 1926, p. 70.

TRICHOSTRONGYLUS ASYMMETRICUS Cameron, 1926.

Hosts—Macropus robustus woodwardi.
Macropus ruficollis bennetti.

Location—Stomach and intestine.

Locality—Western Australia.

References—Cameron, 1926, p. 23.
Wood, 1930, p. 216.

TRICHOSTRONGYLUS AUSTRALIS Wood, 1930.

Host—Macropus robustus woodwardi.

Location—Stomach and intestine.

Locality—Western Australia.

Reference—Wood, 1930, p. 218.

TRICHOSTRONGYLUS DISSIMILIS Wood, 1930.

Host—Macropus robustus woodwardi.

Location—Stomach and intestine.

Locality—Western Australia.

Reference—Wood, 1930, p. 217.

TRICHOSTRONGYLUS sp. Dikmans, 1931.

Host—Didelphis marsupialis virginiana.

Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.

Reference—Dikmans, 1931, p. 3.

TRICHURIS MINUTA (Rudolphi, 1819).

Hosts—Didelphis domestica.
Didelphis marsupialis azarae.

Didelphis marsupialis karkinophaga.
Didelphis marsupialis virginiana.
Marmosa murina.
Metachirus nudicaudatus.

Location—Intestine and caecum.
Locality—Brazil.
References—Chandler, 1930, p. 199.
Cobbold, 1879, p. 433.
Dujardin, 1845, p. 40.
Heine, 1900, p. 780.
Rudolphi, 1819, p. 638.

TRICHURIS PERAMELIS Baylis, 1932.

Host—Isoodon obesula.
Location—Intestine.
Locality—Rollingstone, North Queensland.
Reference—Baylis, 1932, p. 31.

TRICHURIS sp. Dikmans, 1931.

Host—Didelphis marsupialis virginiana.
Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
Reference—Dikmans, 1931, p. 3.

VIANNAIA BURSOBSCURA Dikmans, 1931.

Host—Didelphis marsupialis virginiana.
Location—Small intestine.
Locality—Lab., Zool. Div., Bur. Anim. Ind., U.S. Dept. Agric., Jeanerette, La.
Reference—Dikmans, 1931, p. 1.

VIANNAIA CONSPICUA Travassos, 1914.

Host—Metachirus opossum.
Location—Small intestine.
Locality—Brazil.
References—Travassos, 1914A, p. 326; 1919, p. 204; 1921, pp. 37, 98.
Yorke & Maplestone, 1926, p. 149.

VIANNAIA HAMATA Travassos, 1914.
Host—Didelphis marsupialis aurita.
Location—Small intestine.
Locality—Brazil.
References—Travassos, 1914A, p. 327; 1919, p. 204; 1921, pp. 37, 99.
Yorke & Maplestone, 1926, p. 150.

VIANNAIA PUSILLA Travassos, 1914.
Host—Didelphis marsupialis aurita.
Location—Small intestine.
Locality—Brazil.
References—Travassos, 1914A, p. 327; 1919, p. 204; 1921, pp. 37, 99.
Yorke & Maplestone, 1926, p. 150.

VIANNAIA VIANNAI Travassos, 1914.
Host—Didelphis marsupialis aurita.
Location—Small intestine.
Locality—Brazil.
References—Travassos, 1914A, p. 326; 1919, p. 203; 1921, pp. 36, 97.
Yorke & Maplestone, 1926, p. 149.

ZONIOLAIMUS BREVICAUDATUS Cobb, 1898.
Host—Macropus sp.
References—Cobb, 1898, p. 440.
Yorke & Maplestone, 1926, p. 176.

ZONIOLAIMUS SETIFERA Cobb, 1898.
Hosts—Macropus sp.
Macropus ualabatus.
Location—Stomach.
Locality—Moss Vale, New South Wales, Australia.
References—Cobb, 1898, p. 312.
Johnston, 1909, p. 518.
Yorke & Maplestone, 1926, p. 176.

ACANTHOCEPHALA.

GIGANTORHYNCHUS SEMONI Linstow, 1898.
Hosts—Isoodon obesula.

Perameles nasuta.

Location—Intestine.

Locality—Queensland ; Sydney, New South Wales ; Australia.

References—Johnston, 1909, p. 521 ; 1911A, p. 50.
Linstow, 1898B, p. 471.
Porta, 1908, p. 276.
Zschokke, 1904A, p. 293 ; 1904B, p. 61.

GIGANTORHYNCHUS sp. Johnston, 1910.

Host—Phascogale penicillata.

Location—Intestine.

Locality—New South Wales.

Reference—Johnston, 1911A, p. 50.

NOTES.

The trematodes for which marsupials are the definitive hosts call for no special comment as the majority appear to be specific to their hosts except *Fasciola hepatica* which has been reported from various wild and domesticated mammals.

Amongst the cestodes four forms require to be commented upon. The form *Taenia geophiloides* Cobbold, 1879 seems to be doubtfully considered by Meggitt (1924, p. 28), at least, as a synonym of *Bothriocephalus marginatus* Krefft, 1871 while Johnston (1912, p. 3) considers it probably belongs to the Anoplocephalidae rather than the Taeniidae.

Ortlepp (1922) mentions that the form *Moniezia bipapillosa* (Leidy, 1875), a recognized synonym of which is *Taenia bipapillosa*, should be considered as synonymous with *Hepatotaenia diaphana* (Zschokke, 1907) Nybelin, 1917. Both forms, however, have here been listed.

With regard to *Triplotaenia mirabilis* Boas, 1902, Janicki (1904A, p. 243) considers this species a monstrosity.

Amongst the nematodes the filarial forms require some comment. *Dirofilaria websteri* (Cobbold, 1879) is considered as probably synonymous with *Acanthocheilonema roemeri* (Linstow, 1905) by Baylis (1925). In this list of parasites seven species of the genus *Filaria* are mentioned only one of which is cited specifically. The remaining six, only referred to in the literature as " *Filaria* sp.", have in each case the author and date

added. The only criterion for differentiation is the host record although it should be pointed out that such a procedure is not strictly sound as it is possible for more than one host to harbour the same form of *Filaria*.

The name *Echinorhynchus tortuosus* Leidy, 1850 which may be met with in literature references is recognized as a synonym of *Echinorhynchus microcephalus* Rudolphi, 1819.

It may be useful here to summarize the numbers of helminths parasitizing marsupials. There are 19 species of trematodes distributed among 11 genera, 45 species of cestodes among 20 genera, 61 species of nematodes among 32 genera and 2 species of acanthocephalids in 1 genus ; or, in the aggregate 127 species of helminths among 64 genera.

Marsupials as Reservoir Hosts.

During the accumulation of information on the parasites of marsupials the possibility of these mammals acting as reservoir hosts was not lost sight of but the results have demonstrated that, in the majority of cases, the helminths reported from marsupials appear to be specific to them. In only three cases can it be said with any degree of certainty that other wild as well as domesticated animals harbour the same parasites as marsupials.

The Liver Fluke, *Fasciola hepatica*, is recorded as occurring in Kangaroos, Wallabies, *Macropus giganteus* and *M. ruficollis*. This trematode is also known to infest various mammals including economically important forms such as cattle, sheep, horses, pigs, as well as goats, asses, deer and rabbits. It is also not infrequently found in man in certain parts of the world. That the native marsupial fauna is capable of assisting in the spread of fluke disease seems possible and therefore in this capacity marsupials should be considered as reservoir hosts. Similarly in the case of Hydatid, *Echinococcus granulosus*, this parasite besides occurring in at least six species of *Macropus* is also met with, as the adult form, in canines, and as the larval form in cattle, sheep, pigs, horses, deer, goats, mules and rabbits as well as in human beings. The third cestode common to marsupials and other mammals is *Sparganum reptans*. Its importance is rather insignificant, however, as none of the hosts is of the domesticated variety.

To those apprehensive lest marsupials should function as disseminators of parasitic infections it is therefore reassuring to know that, of the parasites reported from them, less than 3 per cent. occur, so far as is known, in other economically important animals.

Host-List of Helminth Parasites.

The following Host-list of the helminth parasites of marsupials is an alphabetical arrangement of the recognized scientific names of the species of marsupials to which reference has been made in the relevant literature together with their principal synonyms and popular names. The synonyms and popular names listed refer only to the accepted names of forms treated in this memorandum. Under each recognized species of host will be found the following information : The author and date of the host specific name are on the first line. Below this are given respectively the synonyms (if any), the geographical distribution or habitat of the host, and the parasites pertaining to that species of marsupial. The parasites are listed in alphabetical order, each species of helminth having inserted before it a letter indicative of the Class of vermes to which it belongs. Thus T indicates the Class Trematoda, C, Cestoda, N, Nematoda and A, Acanthocephala. This list is intended for use in conjunction with the foregoing Parasite-list in which the arrangement is under parasites and where fuller information is obtainable about the actual helminths together with literature references.

J. N. Oldham.

Host-List of Parasites Arranged under Scientific Names of Marsupials.

Agile Wallaby, *see* Macropus agilis.
American Opossum, *see* Didelphis marsupialis.
Antilopine Kangaroo, *see* Macropus antilopinus.
Aru Island Wallaby, *see* Macropus brunii.
Australian Naked-nosed Wombat, *see* Phascolomis mitchelli.
Azara's Opossum, *see* Didelphis marsupialis azarae.
Bennett's Tree-kangaroo, *see* Dendrolagus bennettianus.

Bennett's Wallaby, *see* Macropus ruficollis bennetti.
Black Cuscus, *see* Phalanger ursinus.
Black-striped Wallaby, *see* Macropus dorsalis.
Black-tailed Wallaby, *see* Macropus ualabatus.
Black Wallaby, *see* Macropus ualabatus.
Bridled Nail-tailed Wallaby, *see* Onychogalea frenata.
Brush-tailed Pouched-Mouse, *see* Phascogale penicillata.
Brush-tailed Rock-Wallaby, *see* Petrogale penicillata.
Chilian Opossum, *see* Marmosa elegans.

CHIRONECTES MINIMUS (Zimmermann, 1780).
Synonymy—*Chironectes palmata.*
Didelphys palmata.
Distribution—Guatemala to South Brazil.
Parasites—
T. Rhopalias baculifer.
T. Rhopalias coronatus.
C. Sparganum sp. (Parona, 1901).

Chironectes palmata, see *Chironectes minimus.*

Common Three-striped Opossum, *see* Didelphis americana.

Crab-eating Opossum, *see* Didelphis marsupialis karkinophaga.

Dama Wallaby, *see* Macropus eugenii.

DASYURUS sp.
Distribution—North Queensland.
Parasites—
N. Spirocerca heydoni.

Dasyurus ursinus, see *Sarcophilus harrisii.*

DASYURUS VIVERRINUS (Shaw, 1800).
Distribution—Australia: New South Wales, South Australia and Tasmania.
Parasites—
T. Harmostomum dasyuri.
T. Mehlisia acuminata.
C. Sparganum sp. Johnston, 1909.

De Bruyn's Wallaby, *see* Macropus brunii.

Dendrolagus bennettianus De Vis, 1886.
Distribution—Australia : Queensland.
Parasites—
N. Filaria sp. Johnston, 1910.

Dendrolagus inustus Schlegel & S. Müller 1839.
Distribution—New Guinea.
Parasite—
N. Breinlia dendrolagi.

Derbian Wallaby, *see* Macropus eugenii.

Didelphis americana (Müller, 1776).
Synonymy—*Didelphis bistriata* (?)
Didelphys tristriatus.
Peramys americana.
Peramys tristriata.
Distribution—Brazil.
Parasites—
C. Linstowia brasiliensis.
C. Linstowia jheringi.

Didelphis bistriata, see (?) *Didelphis americana.*

Didelphis brevicaudata Erxleben, 1777.
Synonymy—*Didelphys brachyura.*
Distribution—Guiana and Brazil.
Parasites—
C. Sparganum reptans.

Didelphis domestica Wagner, 1842.
Distribution—Brazil.
Parasites—
N. Aspidodera scoleciformis.
N. Cruzia tentaculata.
N. Trichuris minuta.

Didelphis goagnia (see explanatory notes).
Parasites—
C. Bothriocephalus sp. Janicki, 1904.

DIDELPHIS MARSUPIALIS Linnaeus, 1758.

Distribution—America : from Northern United States southwards to Chile, Paraguay and Southern Brazil.

Parasites—

C. Bothriocephalus didelphidis.

DIDELPHIS MARSUPIALIS AURITA Wied, 1826.

Synonymy—*Didelphys aurita.*

Distribution—South America : South-eastern Brazil.

Parasites—

N. Aspidodera raillieti.
N. Capillaria auritae.
N. Cruzia tentaculata.
N. Echinorhynchus microcephalus.
N. Gnathostoma turgidum.
T. Harmostomum opisthotrias.
N. Heligmosomum didelphe.
T. Levinseniella jägerskioldi.
N. Ostertagia callis.
T. Rhopalias coronatus.
T. Rhopalias horridus.
N. Viannaia hamata.
N. Viannaia pusilla.
N. Viannaia viannai.

DIDELPHIS MARSUPIALIS AZARAE Temminck, 1827.

Synonymy—*Didelphys azarae.*

Distribution—South America : from Colombia and Chile to Brazil.

Parasites—

C. Bothriocephalus didelphidis.
N. Echinonema sp. Parona, 1900.
N. Gnathostoma turgidum.
N. Physaloptera turgida.
T. Plagiorchis didelphidis.
N. Trichuris minuta.

DIDELPHIS MARSUPIALIS KARKINOPHAGA Zimmermann, 1780.

Synonymy—*Didelphys cancrivora.*

Distribution—Tropical America.

Parasites—

N. Cruzia tentaculata.
N. Echinorhynchus microcephalus.
T. Hemistomum pedatum.
N. Physaloptera turgida.
T. Rhopalias coronatus.
N. Trichuris minuta.

DIDELPHIS MARSUPIALIS VIRGINIANA Kerr, 1792.

Synonymy—*Didelphys virginiana.*

Distribution—North America, from Long Island and the Great Lakes to Oklahoma and Texas. Introduced into California.

Parasites—

N. Aspidodera harwoodi.
N. Cruzia tentaculata.
N. Echinorhynchus microcephalus.
T. Echinostomum sp. Dikmans, 1931.
N. Gnathostoma didelphys.
N. Gnathostoma turgidum.
T. Harmostomum opisthotrias.
T. Harmostomum opisthotrias var. virginiana.
T. Harmostomum sp. Dikmans, 1931.
C. Mesocestoides sp. Dikmans, 1931.
T. Neodiplostomum lucidum.
N. Oesophagostomum sp. Dikmans, 1931.
N. Physaloptera turgida.
T. Proalaria variabilis.
T. Rhopalias coronatus.
T. Rhopalias macracanthus.
T. Rhopalias sp. Dikmans, 1931.
N. Trichostrongylus sp. Dikmans, 1931.
N. Trichuris minuta.
N. Trichuris sp. Dikmans, 1931.
N. Viannaia bursobscura.

DIDELPHIS QUOAIQUIQUA (see explanatory notes).

Parasites—

N. Cruzia tentaculata.

DIDELPHIS sp.

Parasites—

C. Bothriocephalus sp. Janicki, 1904.

N. Echinorhynchus microcephalus.

Didelphys aurita, see *Didelphis marsupialis aurita*.

Didelphys azarae, see *Didelphis marsupialis azarae*.

Didelphys brachyura, see *Didelphis brevicaudata*.

Didelphys cancrivora, see *Didelphis marsupialis karkinophaga*.

Didelphys cayopollin, see *Marmosa murina*.

Didelphys crassicaudata, see *Metachirus crassicaudatus*.

Didelphys derbiana, see *Philander lanigera*.

Didelphys dorsigera, see *Marmosa murina*.

Didelphys elegans, see *Marmosa elegans*.

Didelphys lanigera, see *Philander lanigera*.

Didelphys murina, see *Marmosa murina*.

Didelphys myosurus, see *Metachirus nudicaudatus*.

Didelphys nudicaudata, see *Metachirus nudicaudatus*.

Didelphys opossum, see *Metachirus opossum*.

Didelphys palmata, see *Chironectes minimus*.

Didelphys philander, see *Philander philander*.

Didelphys quica, see *Metachirus opossum*.

Didelphys tristriatus, see *Didelphis americana*.

Didelphys virginiana, see *Didelphis marsupialis virginiana*.

Eugene Island Wallaby, *see* Macropus eugenii.

Fawn Nail-tailed Wallaby, *see* Onychogalea unguifera.

Flinders Island Wombat, *see* Phascolomis ursinus.

Forester, *see* Macropus giganteus.

Four-spotted Opossum, *see* Metachirus opossum.

Gamba Opossum, *see* Didelphis marsupialis aurita.

Great Grey Kangaroo, *see* Macropus giganteus.

Grizzled Grey Tree-Kangaroo, *see* Dendrolagus inustus.

Halmaturus, see *Macropus*.

Halmaturus bennettii, see *Macropus ruficollis bennetti*.

Herbert-River Phalanger, *see* Pseudochirus herbertensis.

Isoodon obesula (Shaw, 1793).

Synonymy—*Perameles obesula*.

Distribution—Australia : widely distributed.

Parasites—

N. Echinonema cincta.
A. Gigantorhynchus semoni.
T. Harmostomum simile.
C. Linstowia echidnae.
C. Linstowia semoni.
N. Trichuris perameles.

Kangaroo (Unspecified).

Parasites—

N. Dirofilaria websteri.
T. Fasciola hepatica.

Koala, *see* Phascolarctos cinereus.

Lagorchestes conspicillatus Gould, 1841.

Distribution—Islands off the North-west coast of Australia.

Parasites—

C. Cittotaenia villosa.
C. Progamotaenia lagorchestis.

Long-eared Opossum, *see* Trichosurus vulpecula.

Long-nosed Bandicoot, *see* Perameles nasuta.

Macropus agilis (Gould, 1841).

Distribution—Northern Australia : some islands off coast and Papua.

Parasites—

C. Hepatotaenia fellicola.

MACROPUS ANTILOPINUS (Gould, 1841).
Distribution—Australia : Arnhem Land, Northern Territory.
Parasites—
N. Acanthocheilonema roemeri.

Macropus bennettii, see *Macropus ruficollis bennetti*.

MACROPUS BROWNI (Ramsay, 1877).
Distribution—New Britain group of islands ; Eastern and South-eastern New Guinea.
Parasites—
N. Cloacina dahli.

MACROPUS BRUNII (Schreber, 1778).
Distribution—Aru and Kei Islands.
Parasites—
C. Raillietina macropa.

Macropus derbianus, see *Macropus eugenii*.

MACROPUS DORSALIS (Gray, 1837).
Distribution—Eastern Australia.
Parasites—
C. Echinococcus granulosus.

MACROPUS EUGENII (Desmarest, 1817).
Synonymy—*Macropus derbianus*.
Distribution—South-western Australia and islands off coast.
Parasites—
C. Echinococcus granulosus.
C. Hepatotaenia festiva.

MACROPUS GIGANTEUS (Zimmermann, 1777).
Synonymy—*Macropus major*.
Distribution—Australia.
Parasites—
N. Acanthocheilonema roemeri.
N. Dirofilaria websteri.
C. Echinococcus granulosus.
T. Fasciola hepatica.
C. Hepatotaenia festiva.

Macropus major, see *Macropus giganteus*.

Macropus robustus Gould, 1840.

Distribution—Eastern Australia: mountain country from South Queensland to New South Wales.

Parasites—

C. Echinococcus granulosus.

C. Hepatotaenia festiva.

Macropus robustus woodwardi Thomas, 1901.

Synonymy—*Macropus woodwardi*.

Distribution—Western Australia: Murchison District.

Parasites—

N. Labiostrongylus longispicularis.

N. Macropostrongylus baylisi.

N. Pharyngostrongylus australis.

N. Pharyngostrongylus woodwardi.

N. Trichostrongylus asymmetricus.

N. Trichostrongylus australis.

N. Trichostrongylus dissimilis.

Macropus ruficollis (Desmarest, 1817).

Distribution—South-eastern Australia.

Parasites—

T. Fasciola hepatica.

Macropus ruficollis bennetti Waterhouse, 1837.

Synonymy—*Halmaturus bennettii*.

Macropus bennettii.

Distribution—Tasmania.

Parasites

N. Austrostrongylus macropodis.

N. Filaria sp. Eisig, 1869.

N. Trichostrongylus asymmetricus.

Macropus rufus (Desmarest, 1822).

Distribution—Australia: inland, open plain country.

Parasites—

N. Pharyngostrongylus australis.

MACROPUS sp.

Parasites—

C. Bothriocephalus marginatus.
N. Globocephaloides macropodis.
N. Labiostrongylus labiostrongylus.
N. Macropostrongylus australis.
N. Macropostrongylus macropostrongylus.
N. Macropostrongylus yorkei.
N. Pharyngostrongylus macropodis.
C. Progamotaenia zschokkei.
N. Setaria spelaea.
N. Spirostrongylus spirostrongylus.
C. Taenia kreffti.
C. Taenia mastersii.
C. Triplotaenia mirabilis.
N. Zoniolaimus brevicaudatus.
N. Zoniolaimus setifera.

MACROPUS THETIDIS (Lesson, 1827).

Distribution—South-eastern Australia.

Parasites—

C. Echinococcus granulosus.

MACROPUS UALABATUS (Lesson & Garnier, 1826).

Distribution—Eastern Australia.

Parasites—

C. Bancroftiella tenuis.
C. Echinococcus granulosus.
N. Zoniolaimus setifera.

Macropus woodwardi, see *Macropus robustus woodwardi*.

MARMOSA ELEGANS (Waterhouse, 1839).

Synonymy—*Didelphys elegans*.

Distribution—South America : Chile.

Parasites—

C. Oochoristica bivittata.
C. Oochoristica didelphidis.
C. Oochoristica marmosae.
C. Oochoristica murina.

MARMOSA MURINA (Linnaeus, 1758).

Synonymy—*Didelphys cayopollin.*
Didelphys dorsigera.
Didelphys murina.

Distribution—South and Central America: from Brazil to as far north as Mexico.

Parasites—

N. Aspidodera scoleciformis.
N. Cruzia tentaculata.
N. Echinorhynchus microcephalus.
N. Heterakis paradoxa.
C. Oochoristica bivittata.
C. Oochoristica didelphidis.
C. Oochoristica murina.
N. Physaloptera turgida.
N. Trichuris minuta.

Marsupial Wolf, *see* Thylacinus cynocephalus.

Merian's Opossum, *see* Marmosa murina.

METACHIRUS CRASSICAUDATUS (Desmarest, 1804).

Synonymy—*Didelphys crassicaudata.*

Distribution—South America: Argentina, Brazil and the Guianas.

Parasites—

N. Lagochilascaris turgida.
N. Physaloptera turgida.

METACHIRUS NUDICAUDATUS (Geoffroy, 1803).

Synonymy—*Didelphys myosurus.*
Didelphys nudicaudata.

Distribution—South and Central America (Brazil to Costa Rica).

Parasites—

N. Aspidodera subulata.
N. Cruzia tentaculata.
N. Filaria sp. Plimmer, 1912.
T. Hemistomum pedatum.
N. Physaloptera turgida.
T. Rhopalias coronatus.
T. Rhopalias horridus.
N. Trichuris minuta.

METACHIRUS OPOSSUM (Linnaeus, 1758).
Synonymy—*Didelphys opossum.*
Didelphys quica.
Distribution—South and Central America to as far north as Mexico.
Parasites—
N. Cruzia tentaculata.
T. Rhopalias coronatus.
T. Rhopalias horridus.
C. Sparganum reptans.
N. Viannaia conspicua.

Mitchell's Wombat, *see* Phascolomis mitchelli.

Murine Opossum, *see* Marmosa murina.

Native Cat, *see* Dasyurus sp.

Native Bear, *see* Phascolarctos cinereus.

North-Australian Bandicoot, *see* Perameles macrura.

Northern Wallaby, see explanatory notes.
Parasites—
C. Taenia kreffti.

ONYCHOGALEA FRENATA (Gould, 1840).
Distribution—Eastern Australia.
Parasites—
N. Filaria sp. Johnston, 1910.
N. Filaria sp. Plimmer, 1912.
C. Progamotaenia bancrofti.

ONYCHOGALEA UNGUIFERA (Gould, 1840).
Distribution—North-western and Northern Australia.
Parasites—
C. Hepatotaenia festiva.
C. Progamotaenia bancrofti.

Opossum, includes Didelphis, Marmosa, Metachirus, Philander, Pseudochirus and Trichosurus.

Pademelon Wallaby, *see* Macropus thetidis.

PERAMELES MACRURA Gould, 1842.

Distribution—Northern Australia, from west to east.

Parasites—

C. Hymenolepis peramelidarum.

C. Linstowia semoni var. acanthocirrosa.

PERAMELES NASUTA Geoffroy, 1804.

Distribution—Eastern Australia.

Parasites—

N. Ascaris sp. Krefft, 1871.

A. Gigantorhynchus semoni.

C. Linstowia semoni.

Perameles obesula, see *Isoodon obesula*.

Peramys americana, see *Didelphis americana*.

Peramys tristriata, see *Didelphis americana*.

PETROGALE PENICILLATA (Gray, 1827).

Distribution—Eastern Australia.

Parasites—

N. Acanthocheilonema australe.

C. Triplotaenia mirabilis.

PHALANGER [*sens. lat.*], unspecified.

Parasites—

C. Bertiella rigida.

PHALANGER URSINUS (Temminck, 1827).

Distribution—Celebes.

Parasites—

C. Bertiella edulis.

C. Bertiella sarasinorum.

Phalangista, see *Phalanger* [*sens. lat.*] which includes *Phalanger*, *Pseudochirus* and *Trichosurus*.

Phalangista vulpina, see *Trichosurus vulpecula*.

PHASCOGALE PENICILLATA (Shaw, 1800).

Synonymy—*Phascologale penicillata*.

Distribution—Australia: widely distributed.

Parasites—

A. Gigantorhynchus sp. Johnston, 1910.

PHASCOLARCTOS CINEREUS (Goldfuss, 1819).
Synonymy—*Phascolarctus cinereus.*
Distribution—Eastern Australia from Queensland to Victoria.
Parasites—
C. Bertiella obesa.
C. Taenia geophiloides.

Phascolarctus cinereus, see *Phascolarctos cinereus.*

Phascologale penicillata, see *Phascogale penicillata*

PHASCOLOMIS MITCHELLI Owen, 1830.
Distribution—South-eastern Australia, from northern New South Wales, through Victoria, to eastern South Australia.
Parasites—
C. Moniezia bipapillosa.

PHASCOLOMIS sp.
Parasites—
C. Moniezia bipapillosa.

PHASCOLOMIS URSINUS (Shaw, 1800).
Distribution—Flinders and Deal Islands, Bass Straits, Australia.
Parasites—
C. Hepatotaenia diaphana.

Philander, *see* Macropus brunii.

PHILANDER LANIGERA (Desmarest, 1820).
Synonymy—*Didelphys derbiana.*
Didelphys lanigera.
Distribution—South and Central America ; from Paraguay to as far north as Mexico.
Parasites—
N. Cruzia tentaculata.

Philander Opossum, *see* Philander philander.

PHILANDER PHILANDER (Linnaeus, 1758).
Synonymy—*Didelphys philander.*
Distribution—South America : Brazil and the Guianas.
Parasites—
N. Cruzia tentaculata.

N. Echinorhynchus microcephalus.
T. Rhopalias horridus.

Pink-tip-eared Opossum, *see* Didelphis marsupialis aurita.

Pseudochirus herbertensis (Collett, 1884).
Distribution—Central Queensland (Herbert River District).
Parasites—
C. Bertiella aberrata.
C. Bertiella pseudochiri.

Pseudochirus lemuroides (Collett, 1884).
Distribution—Herbert River, Central Queensland.
Parasites—
C. Bertiella pellucida.
C. Bertiella undulata.
C. Parabertiella campanulata.

Quenda, *see* Isoodon obesula.

Quica Opossum, *see* Metachirus opossum.

Rat-tailed Opossum, *see* Metachirus nudicaudatus.

Red Kangaroo, *see* Macropus rufus.

Red-necked Wallaby, *see* Macropus ruficollis.

Red-sided Opossum, *see* Didelphis brevicaudata.

Sarcophilus harrisii (Boitard, 1842).
Synonymy—*Dasyurus ursinus.*
Sarcophilus satanicus.
Sarcophilus ursinus.
Distribution—Tasmania.
Parasites—
T. Alaria sp. Cameron, 1931.
C. Anoplotaenia dasyuri.
C. Dasyurotaenia robustae.
N. Nicollina sarcophili.

Sarcophilus satanicus, see *Sarcophilus harrisii.*

Sarcophilus ursinus, see *Sarcophilus harrisii.*

Short-eared Opossum or Phalanger, *see* Trichosurus caninus.

Short-nosed Bandicoot, *see* Isoodon obesula.

Silver-Grey Opossum, *see* Trichosurus vulpecula.

Sombre Wallaby, *see* Macropus browni.

Spectacled Hare-Wallaby, *see* Lagorchestes conspicillatus.

Striped-faced Opossum, *see* Didelphis marsupialis azarae.

Swamp Wallaby, *see* Macropus ualabatus.

Tammar, *see* Macropus eugenii.

Tasmanian Devil, *see* Sarcophilus harrisii.

Tasmanian Wolf, *see* Thylacinus cynocephalus.

Thick-tailed Opossum, *see* Metachirus crassicaudatus.

Thigh-striped Wallaby, *see* Macropus thetidis.

THYLACINUS CYNOCEPHALUS (Harris, 1808).
Distribution—Tasmania.
Parasites—
C. Dithyridium cynocephali.

Tiny Opossum, *see* Marmosa murina.

TRICHOSURUS CANINUS (Ogilby, 1835)
Distribution—Eastern Australia.
Parasites—
N. Filaria sp. Johnston, 1910.

TRICHOSURUS VULPECULA (Kerr, 1792).
Synonymy—*Phalangista vulpina*.
Distribution—Australia, widely distributed, and Tasmania: introduced into New Zealand.
Parasites—
N. Acanthocheilonema australe.
N. Breinlia trichosuri.
N. Filaria dentifera.
N. Protospirura marsupialis.
C. Taenia phalangistae.

Virginian Opossum, *see* Didelphis marsupialis virginiana.

Viverrine Native-Cat, *see* Dasyurus viverrinus.

Wallaby (not specified), includes Dorcopsis, Lagorchestes, Macropus, Onychogalea and Petrogale.

Parasites—

N. Acanthocheilonema australe.

T. Fasciola hepatica.

N. Setaria spelaea.

Wallaroo, *see* Macropus robustus.

Wambenger, *see* Phascogale penicillata.

Water Opossum, *see* Chironectes minimus.

Wied's Opossum, *see* Didelphis marsupialis aurita.

Woodward's Wallaroo, *see* Macropus robustus woodwardi.

Woolly Opossum, *see* Philander lanigera.

Zebra Wolf, *see* Thylacinus cynocephalus.

References.

Ariola, V., 1900.—" Revisione della Famiglia Bothriocephalidae s. str." *Arch. Parasit. Paris*, III (3), 369–484, 3 pls. (*W.L.* 1886.)

Baer, J. G., 1925.—" Some Cestoda described by Beddard, 1911-1920." *Ann. Trop. Med. Parasit.*, XIX (1), 1-22, 15 figs., 1 tab., 17 refs. (*W.L.* 1063.)

Baylis, H. A., 1925.—" Notes on some Australian parasitic nematodes." *Ann. Mag. Nat. Hist.*, Ser. 9, XV (85), 112-115, 1 fig. (*W.L.* 1050.)

— 1927.—" Some new parasitic nematodes from Australia." *Ann. Mag. Nat. Hist.*, Ser. 9, XX (116), 214-225, 9 text-figs., 5 refs. (*W.L.* 1050.)

— 1930A.—" Four new Trichostrongylid nematodes from Queensland." *Ann. Mag. Nat. Hist.*, Ser. 10, VI (31), 1-18, 23 figs., 8 refs. (*W.L.* 1050.)

— 1930B.—" A nomenclatural correction." *Ann. Mag. Nat. Hist.*, Ser. 10, VI (34), p. 550. (*W.L.* 1050.)

— 1932.—" A new species of the nematode genus *Trichuris* from Queensland." *Ann. Mag. Nat. Hist.*, Ser. 10, IX (49), 31-32, 1 fig., 1 ref. (*W.L.* 1050.)

Baylis, H. A., & Lane, C., 1920.—" A revision of the nematode family Gnathostomidae." *Proc. Zool. Soc. Lond.*, pp. 245-310, 40 text-figs., 8 pls., 65 refs. (*W.L.* 16737.)

Beddard, F. E., 1911.—" Contributions to the anatomy and systematic arrangement of the Cestoidea. II. On two new genera of cestodes from mammals." *Proc. Zool. Soc. Lond.*, pp. 994-1018, 12 figs., 9 refs. (*W.L.* 16737.)

— 1912.—" On a new genus (*Dasyurotaenia*) from the Tasmanian Devil *Dasyurus ursinus*, the type of a new family." *Proc. Zool. Soc. Lond.*, pp. 677-695. (*W.L.* 16737.)

— 1914.—" Contributions to the anatomy and systematic arrangement of the Cestoidea. XIII. On two new species belonging to the genera *Oochoristica* and *Linstowia*, with remarks upon those genera." *Proc. Zool. Soc. Lond.*, pp. 263-283. (*W.L.* 16737.)

— 1915.—" Contributions to the anatomy and systematic arrangement of the Cestoidea. XVI. On certain points in the anatomy of the genus *Amabilia* and of *Dasyurotaenia*." *Proc Zool. Soc. Lond.*, pp. 175–192. (*W.L.* 16737.)

Blanchard, R., 1891.—" Notices helminthologiques (deuxième série)." *Mém. Soc. zool. Fr.*, iv (3/4), 420-489, 38 figs. (*W.L.* 13343.)

Boas, J. E. V., 1902.—" *Triplotaenia mirabilis*." *Zool. Jahrb.*, Abt., Syst. xvii, 329-334, 1 pl. (*W.L.* 23831.)

Bourquin, J., 1905.—" Cestodes de mammifères. Le genre *Bertia*." *Rev. suisse Zool.*, xiii, 415-503. (*W.L.* 19288.)

Brandes, G., 1888.—Die Familie der Holostomeae. Ein Prodromus zu einer Monographie Derselben. Leipzig, 72 pp.

Braun, M., 1893.—" Vermes." *Bronn's Klassen*, Abt. Ia, iv (28/30), 817-925, 13 figs., 3 pls. (*W.L.* 3592.)

— 1899.—" Über Clinostomum Leidy." *Zool. Anz.*, xxii (602), 484-488; (603), 489-493, 19 refs. (*W.L.* 23833.)

— 1900a.—" Die Arten der Gattung Clinostomum Leidy." *Zool. Jahrb.*, Abt. Syst., xiv (1), 1-48, 2 pls. (*W.L.* 23831.)

— 1900b.—" Bemerkungen über die Fascioliden-Gattung *Rhopalias*." *Zool. Anz.*, xxiii (605), 27-29. (*W.L.* 23833.)

— 1901.—" Zur Kenntniss der Trematoden der Säugethiere." *Zool. Jahrb.*, Abt. Syst., xiv (4), 311-348, 2 pls. (*W.L.* 23831.)

— 1915.—Naturgeschichte der tierischen Parasiten des Menschen. Würzburg, 5th Edit., x+559 pp., 407 figs.

Breinl, A., 1913.—" Nematodes observed in North Queensland. Report for 1911." *Rep. Aust. Inst. Trop. Med.*, pp. 39-41. (*W.L.* 17930a).

Cameron, T. W. M., 1926.—" On a new species of Trichostrongyle worm from the Bennett's Wallaby." *J. Helm.*, iv (1), 23-26, 3 text-figs., 1 ref.

— 1931.—" On a species of Trichostrongyle from the Tasmanian Devil." *J. Helm.*, ix (3), 153-156, 3 figs., 1 ref.

Chandler, A. C., 1924.—" A new genus of Trichostrongylid worms from the kangaroo." *Parasitology*, xvi (2), 160-163. (*W.L.* 16035.)

— 1930.—" Specific characters in the genus *Trichuris*, with a description of a new species, *Trichuris tenuis*, from a camel." *J. Parasit.*, xvi (4), 198-206, 2 pls. (*W.L.* 11428.)

— 1932.—" Notes on the helminth parasites of the opossum (*Didelphis virginiana*) in Southeast Texas, with descriptions of four new species." *Proc. U.S. Nat. Mus.*, lxxxi, Art. 16 (No. 2939), 1-15, 5 figs., 15 refs. (*W.L.* 16944.)

Cobb, N. A., 1898.—" Extract from MS report on the parasites of stock." *Agric. Gaz. N.S.W.*, IX (3), 296-321 ; (4), 419-454. (*W.L.* 268.)

— 1905.—" The tapeworms of Australia." *Agric. Gaz. N.S.W.*, XVI, 619-631. (*W.L.* 268.)

Cobbold, T. S., 1879.—Parasites : A treatise on the entozoa of man and animals, including some account of the ectozoa. London, 508 pp., 85 figs.

Dickerson, L. M., 1930.—"A new variety of *Harmostomum opisthotrias* from the North American opossum, *Didelphys virginiana*, with a discussion on its possible bearing on the origin of its host." *Parasitology*, XXII, 37-46, 3 figs. (*W.L.* 16035.)

Diesing, K. M., 1850.—Systema Helminthum. Vienna, Vol. I, 679 pp.

— 1851.—Systema Helminthum. Vienna, Vol. II, 588 pp.

— 1855.—" Neunzehn Arten von Trematoden." *Denkschr. Akad. Wiss. Wien*, Math.-nat. Kl., Abt. 1, x, 59-70, 3 pls. (*W.L.* 7134.)

— 1861.—" Revision der Nematoden." *SitzBer. Akad. Wiss. Wien*, Math.-nat. Kl., XLII, 595-736, 1 pl. (*W.L.* 20170.)

Dikmans, G., 1931.—"A new nematode worm *Viannaia bursobscura*, from the opossum, with a note on other parasites of the opossum." *Proc. U.S. Nat. Mus.*, LXXIX, Art. 31, (No. 2897), 1-4, 2 pls., 3 refs. (*W.L.* 16944.)

Douthitt, H., 1915.—" Studies on the cestode family Anoplocephalidae." *Illinois Biol. Monog.*, I (3), 351-446, 6 pls., 56 refs. (*W.L.* 9822.)

Dujardin, F., 1845.—Histoire naturelle des helminthes ou vers intestinaux. Paris, XVI + 648 pp., 12 pls.

Eisig, H., 1869.—" Beschreibung einer *Filaria* aus *Halmaturus*." *Z. wiss. Zool.*, XX (1), 99-102, 1 pl.

Fletcher, J. J., 1883.—In " Notes and Exhibits." *Proc. Linn. Soc. N.S.W.*, VIII (3), 388. (*W.L.* 16790a.)

Fuhrmann, O., 1899.—" Ueber *Taenia depressa* v. Sieb. (Mittheilungen über Vogeltänien. 1.)." *Zbl. Bakt.*, Abt. 1, Orig., XXVI (2/3), 83-86, 2 figs. (*W.L.* 23684.)

— 1902.—" Sur un nouveau bothriocéphalide d'oiseau (*Ptychobothrium armatum*)." *Arch. Parasit. Paris*, V (3), 440-448, 6 figs. (*W.L.* 1886.)

Gemmill, J. F. & Linstow, O. von, 1902.—" *Ichthyonema Grayi* Gemmill u. v. Linstow." *Arch. Naturgesch.*, Jahrg. 68, I (2), 113-118, 1 pl. (*W.L.* 1782.)

Hall, M. C., 1919.—" The adult taenioid cestodes of dogs and cats, and of related carnivores in North America." *Proc. U.S. Nat. Mus.*, LV (No. 2258), 1-94, 80 figs., 154 refs.

Heine, P., 1900.—" Beiträge zur Anatomie und Histologie der Trichocephalen, insbesondere des *Trichocephalus affinis*." *Zbl. Bakt.*, Abt. 1, Orig., xxviii (22), 779-787. (*W.L.* 23684.)

Ihering, H. von, 1902.—" Die Helminthen als Hilfsmittel der zoogeographischen Forschung." *Zool. Anz.*, xxvi, 42-51. (*W.L.* 23833.)

Janicki, C. von, 1904a.—" Weitere Angaben über *Triplotaenia mirabilis* J. E. V. Boas." *Zool. Anz.*, xxvii (7/8), 243-247, 1 fig. (*W.L.* 23833.)

— 1904b.—" Zur Kenntnis einiger Säugetiercestoden." *Zool. Anz.*, xxvii (25), 770-782. (*W.L.* 23833.)

— 1905.—" Beutlercestoden der Niederländischen Neu-Guinea-Expedition. Zugleich einiges Neue aus dem Geschlechtsleben der Cestoden." *Zool. Anz.*, xxix (4), 127-131, 2 text-figs. (*W.L.* 23833.)

— 1906a.—" Studien an Säugetiercestoden." *Z. wiss. Zool.*, lxxxi (2/3), 505-597, 6 pls., 69 refs. (*W.L.* 23635.)

— 1906b.—Die Cestoden Neu Guineas. Nova Guinea. Resultats de l'Expedition scient. Néerl à la Nouvelle-Guinée en 1903. v, Livr. 1, 181-200, 4 pls.

Johnston, S. J., 1913.—" On some trematode parasites of marsupials and of a monotreme." *Proc. Linn. Soc. N.S.W.*, xxxvii (4), 727-740, 3 pls., 16 refs. (*W.L.* 16790.)

Johnston, T. H., 1909.—" The Entozoa of Monotremata and Australian Marsupialia. No. I." *Proc. Linn. Soc. N.S.W.*, xxxiv (3), 514-523, 45 refs. (*W.L.* 16790.)

— 1910.—In "Abstract of Proceedings." *J. Roy. Soc. N.S.W.*, xliv (1), pp. xii and xvii. (*W.L.* 11492.)

— 1911a.—" The Entozoa of Monotremata and Australian Marsupialia. No. II." *Proc. Linn. Soc. N.S.W.*, xxxvi (1), 47-57, 1 pl., 16 refs. (*W.L.* 16790.)

— 1911b.—" Cestoda and Acanthocephala." *Rep. Aust. Inst. Trop. Med.*, pp. 75-96. (*W.L.* 17930a.)

— 1912.—" On a re-examination of the types of Krefft's species of Cestoda in the Australian Museum, Sydney. Part I." *Rec. Aust. Mus.*, ix, 1-35, 6 pls., 75 refs. (*W.L.* 17736.)

— 1913.—" Note on some Entozoa." *Proc. Roy. Soc. Qd.*, xxiv, 63-91, 5 pls. (*W.L.* 16903.)

Krefft, G., 1871.—" On Australian Entozoa, with descriptions of new species." *Trans. Ent. Soc. N.S.W.*, ii (3), 206-232, 3 pls.

LaRue, G. R. & Bosma, N. J., 1927.—" Studies on the trematode family Strigeidae (Holostomidae)." " Society Proceedings," in *J. Parasit.*, xiv (2), 124-125. (*W.L.* 11428.)

LEIDY, J., 1856.—"A synopsis of entozoa and some of their ectocongeners observed by the author." *Proc. Acad. Nat. Sci. Philad.*, VIII (1), 42-58. (*W.L.* 16590.)

— 1875A.—" Notes on some parasitic worms." [Secretary's abstract.] *Proc. Acad. Nat. Sci. Philad.*, XXVII (1), 14-16, 2 figs. (*W.L.* 16590.)

— 1875B.—" Notes on some parasitic worms." *Proc. Acad. Nat. Sci. Philad.*, XXVII (1), 17-18. (*W.L.* 16590.)

— 1886.—" Notices of nematoid worms." *Proc. Acad. Nat. Sci. Philad.*, XXXVIII (3), 308-313, 1 fig. (*W.L.* 16590.)

— 1904.—" Researches in helminthology and parasitology arranged by J. Leidy, Junr." *Smithson. Misc. Coll.*, XLVI, 1-281, 27 figs. (*W.L.* 20256.)

LEIPER, R. T., 1911.—"A demonstration of nematode parasites obtained from animals in the Zoological Gardens." *Proc. Zool. Soc. Lond.*, pp. 620-621. (*W.L.* 16737.)

LEWIS, R. C., 1914.—" On two new species of tapeworms from the stomach and small intestine of a wallaby, *Lagorchestes conspicillatus*, from Hermite Island, Monte Bello Islands." *Proc. Zool. Soc. Lond.*, pp. 419-433, 3 figs., 10 pls., 31 refs. (*W.L.* 16737.)

LINSTOW, O. VON, 1878.—Compendium der Helminthologie. Hannover, xxii + 382 pp.

— 1889.—Compendium der Helminthologie. Nachtrag. Die Litteratur der Jahre 1878-1889. Hannover, xvi + 151 pp.

— 1897.—" Zur Systematik der Nematoden nebst Beschreibung neuer Arten." *Arch. mikr. Anat.*, XLIX (3), 608-622, 1 pl. (*W.L.* 1780.)

— 1898A.—" Nemathelminthen gesammelt von Herrn Prof. Dr. F. Dahl im Bismarck-Archipel." *Arch. Naturgesch*, Jahrg. 63, I (3), 281-291, 2 pls. (*W.L.* 1782.)

— 1898B.—" Nemathelminthen von Herrn Richard Semon in Australien gesammelt." [In Semon, R. Zoologische Forschungsreisen in Australien, etc. v (4).] *Denkschr. med.-naturw. Ges. Jena*, VIII, 469-472, 1 pl. (*W.L.* 7137.)

— 1903.—" Entozoa des Zoologischen Museums der Kaiserlichen Akademie der Wissenschaften zu St. Petersburg. II." *Annu. Mus. zool. Acad. St Pétersb.*, VIII, 265-294, 3 pls., 7 refs. (*W.L.* 8168.)

— 1905.—" Helminthologische Beobachtungen." *Arch. mikr. Anat.*, LXVI (3), 355-366, 1 pl. (*W.L.* 1780.)

— 1906A.—" Neue und bekannte Helminthen." *Zool. Jahrb.*, XXIV (1), 1-20, 1 pl. (*W.L.* 23831.)

— 1906B.—" Neue Helminthen." *Zbl. Bakt.*, Abt. 1, Orig., XLI, 749-752, 1 pl.

Luehe, M., 1899.—" Zur Kenntnis einiger Distomen." *Zool. Anz.*, xxii, 524-539. (*W.L.* 23833.)

— 1905.—" Geschichte und Ergebnisse der Echinorhynchen-Forschung bis auf Westrumb (1821). Mit Bemerkungen über alte und neue Gattungen der Acanthocephalen." *Zool. Ann.*, i, 139-353. (*W.L.* 23828.)

Lutz, A., 1895.—" *Distoma opisthotrias* um nuovo parasita do gambá." *Rev. Mus. paul.*, i, 181-199, 4 figs. (*W.L.* 18925.)

Meggitt, F. J., 1924.—The cestodes of mammals. London, 282 pp.

Molin, R., 1860.—" Una monografia del genere *Dispharagus* ed una monografia del genere *Histiocephalus*." *SitzBer. Akad. Wiss. Wien*, Math.-nat. Kl., xxxix (3), 479-516. (*W.L.* 20170.)

Mönnig, H. O., 1926.—" Three new helminths." *Trans. Roy. Soc. S. Afr.*, xiii, 291-298, 12 figs. (*W.L.* 21653.)

— 1927.—" On a new *Physaloptera* from an eagle and a Trichostrongyle from the cane rat, with notes on *Polydelphis quadricornis* and the genus *Spirostrongylus*." *Trans. Roy. Soc. S. Afr.*, xiv, 261-265, 6 figs. (*W.L.* 21653.)

Neumann, L. G., 1905. A treatise on the parasites and parasitic diseases of the domesticated animals. London, 2nd Edit., xvi + 697 pp., 365 figs.

Neveu-Lemaire, M., 1912.—Parasitologie des animaux domestiques : maladies parasitaires non bactériennes. Paris, 1257 pp., 770 figs.

Nybelin, O., 1917.—" Results of Dr. E. Mjöberg's Swedish Scientific Expedition to Australia, 1910-1913. Pt. xiv. Australische Cestoden." *K. svenska VetenskAkad. Handl.*, lii (14), 1-48, 3 pls. (*W.L.* 11870.)

Ortlepp, R. J., 1922.—"A new Davaineid cestode—*Raillietina* (*Paroniella*) *macropa*, sp. n., from a wallaby." *Ann. Mag. Nat. Hist.*, Ser. 9, ix (53), 602-612, 4 figs., 22 refs. (*W.L.* 1050.)

Pagenstecher, H. A., 1871.—" Ueber *Echinococcus* bei *Macropus major*." *Verh. naturh.-med. Ver. Heidelberg*, v, 181-186. (*W.L.* 22295.)

Parona, C., 1896.—" Intorno ad alcuni distomi nuovi o poco noti." *Atti Soc. ligust. Sci. nat. geogr.*, vii (3), 162-180, 7 figs. (*W.L.* 2189.)

— 1900.—" Di alcuni elminti del Museo Nacional di Buenos Aires." *Comun. Mus. nac. B. Aires*, i (6), 190-197, 1 fig. (*W.L.* 6678.)

— 1901.—" Di alcuni Cestodi brasiliani, raccolti dal Dott. Adolfo Lutz." *Boll. Mus. Zool. Anat. comp. Genova*, No. 102 [Reprint, 12 pp.], 1 ref. (*W.L.* 3324.)

Plimmer, H. G., 1912a.—" On the blood-parasites found in animals in the Zoological Gardens during the four years 1908-1911." *Proc. Zool. Soc. Lond.*, pp. 406-419, 7 pls. (*W.L.* 16737.)

PLIMMER, H. G. 1912B.—" The President's address: On certain blood parasites." *J. R. Micr. Soc.*, pp. 133-150, 2 pls. (*W.L.* 11360.)

PORTA, A., 1908.—" Gli Acantocefali dei mammiferi. Nota prev." *Arch. Parasit. Paris*, XII, 268-282. (*W.L.* 1886.)

— 1909.—" Gli Acantocefali dei mammiferi." *Arch. zool.* (*ital.*) *Napoli*, IV, 239-285. (*W.L.* 1949.)

RAILLIET, A., 1893.—Traité de zoologie médicale et agricole. Paris, 2nd Edit., 736 pp., 494 figs.

RAILLIET, A. & HENRY, A., 1910.—" Les Onchocerques, nématodes parasites du tissu conjonctif." *C. R. Soc. Biol. Paris*, LXVIII, 248-251. (*W.L.* 6630.)

— 1911.—" Sur une filaire péritonéale des porcins." *Bull. Soc. Path. exotique*, IV (6), 386-389. (*W.L.* 5310.)

— 1912.—" Quelques nématodes parasites des reptiles." *Bull. Soc. Path. exotique*, V (4), 251-259. (*W.L.* 5310.)

— 1914.—" Essai de classification des *Heterakidae*." *9th Int. Cong. Zool. Monaco*, pp. 674-682. (*W.L.* 23998.)

RANSOM, B. H., 1907.—" Tapeworm cysts (*Dithyridium cynocephali* n. sp.) in the muscles of a marsupial wolf (*Thylacinus cynocephalus*)." *Trans. Amer. Micr. Soc.*, XXVII, 31-32, 1 pl. (*W.L.* 21400a.)

RUDOLPHI, C. A., 1819.—Entozoorum Synopsis. Berlin, 811 pp.

SCHNEIDER, A., 1866.—Monographie der Nematoden. Berlin, viii + 357 pp., 122 figs., 28 pls.

SHIPLEY, A. E., 1902.—" On a collection of parasites from the Soudan." *Arch. Parasit. Paris*, VI (4), 604-612, 1 pl., 9 refs. (*W.L.* 1886.)

SOLOMON, S. G., 1933.—"A note on a new species of *Breinlia* (*FILARIIDAE*), from a Tree-Kangaroo." *J. Helm.*, XI (2), 101-104, 5 figs., 1 ref.

SPENGEL, J. W., 1905.—" Die Monozootie der Cestoden." *Z. wiss. Zool.*, Festschr. Ehlers, LXXXII, 252-287. (*W.L.* 23635.)

STILES, C. W., 1906.—" Illustrated key to the cestode parasites of man." *Bull. U.S. Hyg. Lab.*, No. 25, 104 pp., 166 figs., 19 refs. (*W.L.* 4295.)

STILES, C. W. & HASSALL, A., 1893.—"A revision of the adult cestodes of cattle, sheep, and allied animals." *Bull. U.S. Bur. Anim. Ind.*, No. 4, 101 pp., 16 pls., 75 refs. (*W.L.* 5642.)

— 1894.—"A preliminary catalogue of the parasites contained in the collections of the United States Bureau of Animal Industry, United States Army Medical Museum, Biological Dept. of the University of Pennsylvania (Coll. Leidy) and in Coll. Stiles and Coll. Hassall." *Vet. Mag.*, I (4), 245-253; 331-354.

Stiles, C. W., 1898.—"An inventory of the genera and subgenera of the trematode family Fasciolidae. [Notes on parasites. 48]." *Arch. Parasit. Paris*, I (1), 81-99. (*W.L.* 1886.)

— 1905.—" The determination of generic types, and a list of roundworm genera, with their original and type species." *Bull. U.S. Bur. Anim. Ind.*, No. 79, 150 pp. (*W.L.* 5642.)

Stossich, M., 1889.—" Il genere *Physaloptera* Rudolphi. Lavoro monografico." *Boll. Soc. adriat. Sci. nat.*, XI, 36-59, 3 pls. (*W.L.* 3359.)

— 1892.—" I distomi dei mammiferi." *Program. civ. scuola r. sup., Trieste*, 42 pp.

— 1902.—" Sopra alcuni nematodi della collezione elmintologica del prof. dott. Corrado Parona." *Boll. Mus. Zool. Anat. comp. Genova*, No. 116 [Reprint, 16 pp.], 3 pls. (*W.L.* 3324.)

— 1904.—" Una nuova specie del genere *Plagiorchis* Lühe." *Annu. Mus. zool. Univ. Napoli*, n.s., I (16), 1-2, 1 fig., 1 tab. (*W.L.* 1535.)

Travassos, L., 1913.—" Sobre as especies brazeiras da subfamilia Heterakinae Railliet & Henry." *Mem. Inst. Oswaldo Cruz*, V (3), 271-318, 5 pls. (*W.L.* 13465.)

— 1914A.—" Tricostrongylideos brazilieros. (3a Nota prévia)." *Brazil-med.*, XXVIII, 325-327. (*W.L.* 3494.)

— 1914B.—" Sobre as especies brazileiras do genero *Capillaria* Zeder 1800. (Nota prévia.)" *Brazil-med.*, XXVIII, p. 429. (*W.L.* 3494.)

— 1915A.—" Contribuições para o conhecimento da fauna helmintolojica brasileira. V. Sobre as especies brasileiras do genero *Capillaria* Zeder, 1800." *Mem. Inst. Oswaldo Cruz*, VII (2), 146-172. (*W.L.* 13465.)

— 1915B.—" Revisão dos Acantocephalos brazileiros. I. Fam. Gigantorhynchidae Hamann 1892. (Nota prévia)." *Brazil-med.*, XXIX, p. 105. (*W.L.* 3494.)

— 1915C.—" Revisão dos Acantocephalos brazileiros. I. Fam. Gigantorhynchidae Hamann, 1892. (2a Nota prévia)." *Brazil-med.*, XXIX, p. 137. (*W.L.* 3494.)

— 1917.—"Alguns helminthos da collecção do Instituto Bacteriologico de S. Paulo." *Brazil-med.*, XXXI, 99-100. (*W.L.* 3494.)

— 1919.—" Trichostrongylidae brazileiras." *Rev. Soc. Brasil. Sci. Rio*, III, 191-205.

— 1920.—" Contribuição para conhecimento da fauna helmintolojica brasileiro. IX. Sobre as especies da sub-familia Microphalinae Ward, 1901." *Arch. Esc. Agric. Med. vet. Nictheroy*, IV (2), 85-91, 5 pls.

— 1921.—" Contribuições para o conhecimento da fauna helmintolojica brasileira. XIII. Ensaio monografico da familia Trichostrongylidae Leiper, 1909." *Mem. Inst. Oswaldo Cruz*, XIII (1), 5-135, 56 pls., 203 refs. (*W.L.* 13465.)

— 1922.—" Contribuições para o conhecimento da fauna helmintolojica brasileira. XVI. *Cruzia tentaculata* (Rud., 1819)." *Mem. Inst. Oswaldo Cruz*, XIV (1), 88-94, 4 pls. (*W.L.* 13465.)

— 1925.—" Contribuições para o conhecimento da fauna helmintolojica brasileira. XVIII. Sobre as especies brasileiras do genero *Gnathostoma* Owen, 1836." *Sciencia Medica*, III (7), 3-12, 13 text-figs., 8 refs.

— 1928.—" Fauna helminthologica de Matto Grosso. (Trematodeos—I parte)." *Mem. Inst. Oswaldo Cruz*, XXI (2), 309-341, 13 pls. (*W.L.* 13465.)

VIANA, L., 1924.—" Tentativa de catalogação das especies brazileiras de trematodeos." *Mem. Inst. Oswaldo Cruz*, XVII (1), 95-227, 524 refs. (*W.L.* 13465.)

WESTRUMB, A. H. L., 1821.—De helminthibus acanthocephalis. Hanoverae, 85 pp., 3 pls.

WITENBERG, G., 1925.—" Versuch einer Monographie der Trematodenunterfamilie Harmostominae Braun." *Zool. Jahrb.*, Abt. Syst., LI, 167-254, 2 pls., 128 refs. (*W.L.* 23831.)

WOOD, W. A., 1929A.—" On a new species of *Labiostrongylus*." *Ann. Mag. Nat. Hist.*, Ser. 10, IV (24), 550-551, 1 ref. (*W.L.* 1050.)

— 1929B.—"A note on *Rugopharynx australis* (Monnig 1926)." *Ann. Mag. Nat. Hist.*, Ser. 10, IV (24), 552-554. (*W.L.* 1050.)

— 1930.—" Some new parasitic nematodes from Western Australia." *1st Rep. Direct. Inst. Anim. Path. Cambridge*, pp. 209-219, 3 refs.

YORKE, W. & MAPLESTONE, P. A., 1926.—The nematode parasites of vertebrates. London, 536 pp., 307 figs., 684 refs.

ZSCHOKKE, F., 1896.—" Die Taenien der aplacentalen Säugethiere." *Zool. Anz.*, XIX (519), 481-482. (*W.L.* 23833.)

— 1898A.—" Weitere Untersuchungen an Cestoden aplacentaler Säugethiere." *Zool. Anz.*, XXI (567), 477-479. (*W.L.* 23833.)

— 1898B.—" Die Cestoden der Marsupialia und Monotremata." *Denkschr. med.-naturw. Ges. Jena*, VIII, 357-380, 1 pl., 29 refs. (*W.L.* 7137.)

— 1899.—" Neue Studien an Cestoden aplacentaler Säugethiere." *Z. wiss. Zool.*, LXV (3), 404-445, 2 pls., 30 refs. (*W.L.* 23635.)

— 1904A.—" Die Cestoden der südamerikanischen Beuteltiere." *Zool. Anz.*, XXVII (9), 290-293, 1 ref. (*W.L.* 23833.)

— 1904B.—" Die Darmcestoden der amerikanischen Beuteltiere." *Zbl. Bakt.*, Abt. 1, Orig., XXXVI (1), 51-62, 1 pl., 14 refs. (*W.L.* 23684.)

Zschokke, F., 1905.—" Das Genus *Oochoristica* Lühe." *Z. wiss. Zool.*, lxxxiii, 53-67, 1 pl., 11 refs. (*W.L.* 23635.)

— 1907.—" *Moniezia diaphana* n. sp. Ein weiterer Beitrag zur Kenntnis der Cestoden aplacentaler Säugetiere." *Zbl. Bakt.*, Abt. 1, Orig., xliv (3), 261-264, 1 fig. (*W.L.* 23684.)

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